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At the very heart of warfare lies doctrine. It represents the central beliefs for waging war in order to achieve victory. Doctrine is of the mind, a network of faith and knowledge reinforced by experience which lays the pattern for the application of men, equipment, and tactics. It is the building material for strategy. It is fundamental to sound judgment.

GENERAL CURTIS LEMAY, 1968

16 March 1984

FOREWORD

The United States Air Force is the primary aerospace arm of our Nation's Armed Forces. This Manual contains the basic doctrine for preparing and employing that arm. Its purpose is to impart to all Air Force personnel a basis for understanding the use of aerospace forces, in peace and war, and to serve as a background for succeeding publications covering the operations, tactics, techniques, and procedures of employing aerospace forces.

Basic aerospace doctrine has evolved from the first use of the airplane in World War I to the most recent influences and developments in the Space Age. Our basic doctrine describes how we would use aerospace forces to meet the threats and challenges facing us today, but it is also the point of departure for guiding our Nation's aerospace arm in meeting the challenges of tomorrow. Aerospace power is, and will continue to be, a critical element in protecting our Nation and deterring aggression. Therefore, I urge that all airmen study, evaluate, and know our doctrine—for each of us, as professional airmen, has a responsibility to be articulate and knowledgeable advocates of aerospace power.

CHARLES A. GABRIEL, General, USAF
Chief of Staff

PREFACE

> Doctrine: Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.
>
> JCS Publication 1, *Dictionary of Military and Associated Terms*

Aerospace doctrine is a statement of officially sanctioned beliefs and warfighting principles which describe and guide the proper use of aerospace forces in military action. The Air Force promulgates and teaches this doctrine as a common frame of reference on the best way to prepare and employ aerospace forces. Accordingly, aerospace doctrine drives how the Air Force organizes, trains, equips, and sustains its forces.

Aerospace doctrine is an accumulation of knowledge which is gained primarily from the study and analysis of experience. As such, doctrine reflects what has usually worked best. These experiences may include actual combat operations as well as tests, exercises, or maneuvers. In those less frequent instances where experience is lacking or difficult to acquire (theater nuclear operations), doctrine may be developed through analysis of postulated actions.

Aerospace doctrine has grown from the need to establish common guidelines for military action. These guidelines are particularly important under the stress of combat. For example, if a subordinate is unable to communicate with his commander and follows established doctrine, his actions will normally follow his commander's recommended course of action and support the larger scheme of operation. This example describes the prescriptive nature of doctrine, but it should be emphasized that doctrine provides a suggested course of action. It is not mandatory. As the JCS Publication 1 definition states, doctrine "is authoritative but requires judgment in application".

The Air Force has articulated aerospace doctrine at different levels and depths of detail in the forms of basic, operational, and tactical doctrine. Each level of doctrine plays an important role in describing and guiding the preparation (organizing, training, equipping, and sustaining) and employment of aerospace forces.

Basic doctrine states the most fundamental and enduring beliefs which describe and guide the proper use of aerospace forces in military action. Basic doctrine is the foundation of all aerospace doctrine. Because of its fundamental and enduring character, basic doctrine provides broad and continuing guidance on how Air Force forces are prepared and employed.

The Air Force publishes basic doctrine in the Air Force 1-series manuals. AFM 1-1 is the cornerstone doctrinal manual and also provides the framework from which the Air Force develops operational doctrine.

Operational doctrine applies the principles of basic doctrine to military actions by describing the proper use of aerospace forces in the context of distinct objectives, force capabilities, broad mission areas, and operational environments. Operational doctrine describes the organization of aerospace forces, and it anticipates changes and influences which may affect military operations, such as technological advances. The Air Force publishes operational doctrine in the Air Force 2- series manuals to provide detailed mission descriptions and methods for preparing and employing aerospace forces. Basic and operational doctrine provide the framework from which the Air Force develops tactical doctrine.

Tactical doctrine applies basic and operational doctrine to military actions by describing the proper use of specific weapon systems to accomplish detailed objectives. Tactical doctrine considers particular tactical objectives (blockading a harbor with aerial mines) and tactical conditions (threats, weather, and terrain) and describes how a specific weapon system is employed to accomplish the tactical objective (B-1s laying mines at low altitude). Tactical doctrine is published in the Air Force 3- series manuals, which serve as the departure point for the development of tactics, techniques, and procedures.

The three levels of aerospace doctrine mentioned above are neither mutually exclusive nor rigidly limited by precise boundaries. An example helps to illustrate their relationship.

Basic doctrine. An important goal in air warfare is to gain freedom of action in the air environment.

Operational doctrine. An air commander employs forces to attain air superiority by orchestrating offensive and defensive counter air operations, suppressing enemy air defenses, and coordinating various support actions (warning, command, control, and communications, deception, countermeasures, aerial refueling, and logistics).

Tactical doctrine. A F-15 flies sorties such as combat air patrol in certain formations and numbers dependent upon the tactical objective and conditions. Tactical doctrine describes how F-15 combat air patrol missions may be integrated and coordinated with other weapon systems such as AWACS, F-4Gs (Wild Weasels), EF-111s, EC-130s, and KC-135s.

When the Air Force develops aerospace doctrine, consideration must be given to the US Military Doctrine of unified action. The doctrine of unified action, detailed in JCS Publication 2, *Unified Action Armed Forces*, describes

the relationship of air, land, and naval forces, the organization of those forces under unity of command, and the authorities and responsibilities of commanders. JCS Publication 2 provides broad guidance for developing more detailed and specific joint doctrines and for the US Armed Forces' approach to developing combined doctrine. Aerospace doctrine provides a fundamental reference authority for the Air Force contribution to both joint and combined doctrine.

Joint doctrine, relating to aerospace forces, applies aerospace doctrine to joint operations and describes the best way to integrate and employ aerospace forces with land and naval forces in military action. Joint doctrine may be published as a JCS publication, endorsed by all the Services, or as a joint Service publication of two or more Services and implemented through the respective Service Chiefs of Staff.

Combined doctrine, relating to aerospace forces, applies aerospace doctrine to combined operations and describes the best way to integrate and employ aerospace forces with the forces of our allies in coalition warfare. It establishes the principles, organization, and fundamental procedures agreed upon between or among allied forces. Combined doctrine supports mutual defense treaties, agreements, or organizations, and promotes compatible arrangements for employment of armed forces in combined operations.

The Air Force continuously refines aerospace doctrine to make it relevant to present operations and viable for future contingencies. This process requires an open channel of communication between those headquarters' staffs charged with formulating doctrine and those echelons involved in the daily process of learning from experience. Feedback from these echelons is critical to evaluating and modifying existing doctrine and, when necessary, to formulating new doctrine. AFM 1-1 is published, in part, to remind each and every individual in the Air Force of the obligation to keep aerospace doctrine usable. This obligation requires that commanders solicit feedback, and that subordinates give it. By seeing his or her part in the larger whole, the professional airman will be better equipped and more inclined to exercise that initiative.

Aerospace doctrine provides all airmen with a basic reference for why we have an Air Force. Every individual in the Air Force needs to understand aerospace doctrine—what it is, why we need it, and how to use it. The text which follows is intended as a broad overview of basic aerospace doctrine and is presented at a relatively high level of abstraction. For more detail, readers should consult manuals in the Air Force 1-, 2-, and 3- series relating to specific areas of basic, operational, and tactical aerospace doctrine.

NOTE: Throughout this manual, "aerospace" and "air" are used interchangeably. The use of "air" should not be construed as a more limited treatment of the aerospace medium.

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Chapter 1
Military Instrument of National Power

Chapter 1
MILITARY INSTRUMENT OF NATIONAL POWER

It is the intent of Congress to provide an Air Force that is capable, in conjunction with other armed forces, of preserving the peace and security, and providing for the defense, of the United States, the Territories, Commonwealths, and possessions, and any areas occupied by the United States; supporting the national policies; implementing the national objectives; and overcoming any nations responsible for aggressive acts that imperil the peace and security of the United States.

United States Code, Title 10, Section 8062, Armed Forces

1-1. INTRODUCTION

The conduct of war is the art and science of using military force with other instruments of national power to achieve victory. Military victory is normally the decisive defeat of an enemy which breaks his will to wage war and forces him to sue for peace. In a broader sense, the attainment of stated objectives, limited or total, defines victory. The decision to commit US military forces in the conduct of war must consider the desired objectives, the capabilities of our forces, and the will of the people. The fabric of our society and the character of our national values suggest that the decision to employ US military forces depends on a clear declaration of objectives and the support of the American people. In every sense, US Armed Forces belong to the people, and the ultimate success in committing these armed forces to achieve an objective will rely on the support of the people. To ignore this relationship is to invite defeat.

Once the decision to use military force is made, doctrine describes the best way to employ military forces to achieve objectives. Sound military doctrine, applied to combat operations, is a fundamental prerequisite for victory in warfare. This manual states that portion of military doctrine, referred to as basic aerospace doctrine, which describes the proper use of aerospace forces in military action. It also provides broad guidelines for preparing Air Force forces. This chapter will briefly discuss our national security objectives, our national military objectives, and the structure for the US military doctrine of unified action to outline the national framework which aerospace doctrine and Air Force forces must support.

1-2. NATIONAL SECURITY OBJECTIVES

Our primary national security objective is to preserve the United States as a free nation with its fundamental institutions and values intact. National security policy is the broad course of action adopted by the US Government in pursuit of our national security objectives. National policy is implemented through the use of the major instruments of national power: economic, political, psychosocial, technological, and military. Our laws provide our national leadership with the authority to determine how these instruments can best contribute to attaining national security objectives. The instruments of national power reinforce one another and are used in a coordinated, integrated effort. Situations which directly threaten our security or vital interests will normally increase the influence and reliance on the military instrument of national power as part of that integrated effort. The use of US Armed Forces, then, is integrated with the other instruments of national power to attain national security objectives. Consequently, the national military objectives and our military forces must support this structure.

1-3. NATIONAL MILITARY OBJECTIVES

US military forces must be capable of achieving our national military objectives. To meet this goal, the Department of Defense creates and sustains military forces which can conduct warfare and achieve victory at all levels of conflict. Specifically, our national military objectives are to:

Deter attacks against the United States, our allies, and against vital US interests worldwide, including sources of essential materials, energy, and associated lines of communication.

Prevent an enemy from politically coercing the United States, its allies, and friends.

If deterrence fails, fight at the level of intensity and duration necessary to attain US political objectives.

A potential enemy must perceive that the United States has the military capability to exert an unacceptable counter to aggression and that we also have the will to use that capability. This is the essence of deterrence, and it applies to the entire spectrum of warfare.

1-4. EMPLOYING FORCES IN UNIFIED ACTION

Military operations are coordinated actions normally undertaken to implement national policy and to attain, or help attain, national objectives which cannot be achieved by other means. Although military operations do not always require the use of force, they must always be executed to accomplish or produce specific effects which support national objectives. Our military forces must be capable of achieving victory across a wide spectrum of conflicts or crises. This spectrum is a continuum defined primarily by the

magnitude of the declared objectives. The scope of the objectives may be limited or total and, therefore, determines the character and dimension of a military operation. To accomplish national military objectives, our military forces train to fight as an interdependent team of land, naval, and aerospace forces. The function of command integrates and employs these forces in a unified effort to accomplish common objectives. The doctrine of unified action describes how US military forces are integrated and employed with unity of effort through specified and unified combatant commands.

LAND, NAVAL, AND AEROSPACE FORCES

To achieve military objectives, our military forces must be capable of producing three fundamental effects in varying degrees: neutralization, destruction, and capture. Land, naval, and aerospace forces possess certain intrinsic capabilities to produce these effects. Each force derives its intrinsic capabilities from the characteristics and medium in which it operates. Certain of these forces have greater capabilities than others to produce one or more of the fundamental effects. A military force exerts these effects to gain or maintain control of its operating medium. By integrating and coordinating their actions, each force makes a unique contribution to achieving the primary objective.

The basic objective of **land** forces is to win the land battle—to gain and/or maintain control of vital territories. Land forces may neutralize, destroy, or capture enemy land forces in this effort. To invade, occupy, or defend vital areas, our aerospace forces must render enemy aerospace power ineffective, which is a necessary step in ultimately eliminating the enemy's combat effectiveness on land.

The basic objective of **naval** forces is to win the naval battle—to gain and/or maintain control of vital sea areas and to protect vital sea lines of communication. Naval forces may neutralize, destroy, or capture enemy naval forces or enemy sea commerce in this effort. The success of these naval actions is predicated on adequate control of the aerospace environment.

The basic objective of **aerospace** forces is to win the aerospace battle—to gain and/or maintain control of the aerospace environment and to take decisive actions immediately and directly against an enemy's warfighting capacity. These actions include neutralizing or destroying the enemy's forces, his command and control mechanisms, and his sustaining warfighting capacity. As a critical element of the interdependent land-naval-aerospace team, aerospace power can be the decisive force in warfare. Commanders must design their warfighting organization and plans to take advantage of this relationship.

When the United States Air Force was established as a separate Service . . . it was given primary responsibility for providing this country with the airpower needed to defend it at home and meet its commitments abroad. . . . Considering the nature of modern war, airpower can dominate not only the air but the land and sea as well. The Air Force must be able to deny control of the air to enemy air forces and to provide ground and naval forces the assistance necess ry for them to control their environment.

General John D. Ryan, 1972

SPECIFIED AND UNIFIED COMMANDS

The National Command Authorities (NCA) normally exercise command of US Armed Forces through the specified and unified combatant commands. Command is the exercise of leadership and power of decision over the Armed Forces to gain unity of effort toward a common objective. Unity of effort among Service forces assigned to these commands is achieved by exercise of operational command through the specified or unified commander, adherence to strategic objectives, and a sound operational and administrative command organization. The Joint Chiefs of Staff and the combatant commands give overall strategic direction to our Armed Forces, while the Military Departments prepare and provide forces to these commands.

Specified commands have a broad continuing mission and are normally composed of forces from one Service. In unified commands (or subordinate unified commands), forces from two or more Services are commanded by a single commander, with operational command and control of assigned forces normally exercised through subordinate component commanders. Service forces may also be organized into a joint task force or a uni-Service force. Within these organizations, the Military Departments retain responsibility for administration and support of their forces assigned to the combatant commands. This relationship demands that the Services develop mutual confidence, common understanding of primary and supporting missions, and a common doctrine for unified action. The role of aerospace doctrine in this structure is to provide those warfighting guidelines that describe the effective employment of aerospace forces in unified action.

Chapter 2
Employing Aerospace Forces

Chapter 2
EMPLOYING AEROSPACE FORCES

> The employment of land, sea, and air forces in time of war should be directed towards one single aim: VICTORY. If maximum effectiveness is to be obtained, these forces operate as components of one single product. . . . Therefore, although the commander of the Army, Navy, and Air Force should be given the greatest freedom of action in their respective sphere, it would be in the interests of national defense to have a supreme authority coordinating their various actions.
>
> General Guilio Douhet, 1921

2-1. INTRODUCTION

The types of military action in which a commander may employ aerospace forces cross a wide spectrum of warfare from low intensity combat to strategic warfare for national survival. The Air Force prepares aerospace forces to meet the challenges of these diverse actions and to engage any enemy and defeat him. Air Force forces serve to defend the United States, to deter aggression, and to conduct warfare in support of national policies and objectives through unified action. Integrating an aerospace force in unified action is a complex task, but essential to our national defense structure and mandated by law.

This chapter portrays the central beliefs of the Air Force for using aerospace forces to wage war. These beliefs are reinforced by experience and lay the pattern for the utilization of men, equipment, and tactics. The chapter discusses the employment of aerospace power from the perspective of an air commander, and it addresses the role of aerospace forces in achieving military victory. The premise of this chapter is that an air commander prepares and employs forces according to the doctrine that dictates their most effective use, and that a fundamental understanding of aerospace doctrine provides the frame of reference from which the air commander develops his plan of action. The basic guidelines discussed herein are relevant to all military operations involving aerospace forces. But an air commander must apply this doctrine with judgment, and he must tailor his actions to specific situations and objectives. An understanding of the aerospace

environment, the characteristics and capabilities of aerospace forces, and the principles of war provide the foundation to an air commander's broad plan of employment.

2-2. AEROSPACE ENVIRONMENT

Aerospace is the total expanse beyond the Earth's surface; it is the multidimensional operating environment where Air Force forces can perform all of their missions. The nature of the medium gives aerospace forces a versatility not common to surface forces. The sea and the land have natural, limited boundaries which restrict the employment of surface forces, while aerospace forces are free to engage or support land, sea, and other aerospace forces. The unbounded medium of aerospace allows commanders to disperse, concentrate, and maneuver aerospace forces to gain unparalleled observation of any point on the Earth's surface. For military operations, the aerospa medium exposes an enemy's entire power structure to assault by the aerospace vehicle, including his sustaining warfighting components vital to the prosecution of war.

Space is the outer reaches of the aerospace operational medium. In fulfilling US national security objectives, the Air Force has the primary responsibility for maintaining the United States' freedom to act throughout the aerospace. Space, as a part of that medium, provides an unlimited potential and opportunity for military operations and a place where the Air Force can perform or support all of its missions and tasks.

2-3. CHARACTERISTICS

Aerospace allows potentially unlimited horizontal and vertical movement for aerospace warfare systems. The capacity to maneuver freely in three dimensions allows our forces to exploit the characteristics of **speed, range,** and **flexibility.** These characteristics enable forces to apply combat power against all elements of an enemy's structure. The speed of aerospace forces significantly reduces the time needed to accomplish a mission or objective and affords rapid projection of combat power. The range of aerospace forces provides the ability to operate in any direction over great distances, unimpeded by surface features such as mountains and oceans. The flexibility of aerospace forces provides the ability to perform a variety of actions, to produce a wide range of effects and influences, and to adapt to changing circumstances and environments. The speed, range, and flexibility of aerospace forces allow commanders to move quickly from one course of action to another and to influence military operations with extensive, fundamental combat capabilities.

2-4. CAPABILITIES

The characteristics of aerospace forces and the aerospace environment provide the potential to exploit certain fundamental combat capabilities which can significantly enhance the effect and influence of military actions. Aerospace forces can be responsive, mobile, and survivable and can provide presence, destructive firepower, and observation. The capacity to deliver these capabilities in combat depends on the readiness of an aerospace force. The Air Force organizes, trains, equips, and sustains an aerospace force that is ready to exploit the following fundamental capabilities over a wide range of military actions.

Aerospace forces can be **responsive.** Our forces can react quickly and bring to bear the force of aerospace power anywhere in the world. The responsiveness of aerospace forces lets commanders employ combat power when hostilities begin. Responsive forces can demonstrate a signal of resolve or intent through deployments, increased stages of alert, or shows of force.

Aerospace forces can be **mobile** and can project combat power worldwide. Mobility means moving combat air power where it is needed most and repositioning that power to meet changing needs. Mobile aerospace operations may entail direct application of force or the movement, resupply, or support of deployed aerospace and surface forces.

Aerospace forces can be **survivable.** Maneuverability combined with speed and range and the unbounded expanse of aerospace allow aerospace forces to conduct combat operations unencumbered by most of the physical limitations imposed on surface forces. The medium of aerospace provides a unique operational environment that complicates an enemy's efforts to detect, identify, engage, and destroy opposing forces. Aerospace forces provide commanders with a survivable combat arm that can conduct operations directly against the source of an enemy's strength, respond quickly to changing enemy initiatives, and by recycled until objectives are attained.

Aerospace forces can show **presence,** both in the sense of constant vigilance and alert as well as in the action of bringing persistent combat power to bear on an enemy's military structure. Aerospace forces stand poised to respond worldwide to aggression. Aerospace forces can deploy quickly and sustain themselves for extended periods of time. The positioning of these forces, in peace and in war, can demonstrate our national concern and can provide a show of force to deter aggression.

Aerospace forces can deliver **destructive firepower** worldwide. The shock effect inherent in aerospace power is the product of an unequaled capacity to concentrate combat power in time and space. Aerospace forces provide commanders with the capability of selective or widespread destruction of an enemy's military capacity and the ability to conduct these actions rapidly against any enemy.

Aerospace forces can provide unparalleled **observation** of the Earth's surface and the aerospace environment. Aerospace forces can continuously observe the activities of potential enemies and worldwide environmental conditions. Possessing speed, range, and flexibility, aerospace forces can monitor, report and react to potential adversary actions in both peace and war.

2-5. FUNDAMENTALS OF WARFIGHTING

Fundamental to understanding warfighting principles is recognition of the three essential factors in warfare: man, machine, and environment. The nature of warfighting demands that commanders study these factors as interacting elements. Machinery is the factor which is most easily controlled and quantified, and as a result, it often receives the most attention. Warfighting adapts to the environment more often than it controls or surmounts th environment. Man, both friend and foe, is the most complex factor ana therefore, is the least understood. This in no way lessens the critical importance for commanders to know their men and to know their enemy.

For the military professional, there is no simple formula to learn warfighting. Gaining that knowledge is a continuous process that is the product of institutionalized education and training, experience, and personal effort. Warfighting is a complex, demanding activity that involves the interaction of man, machine, and environment. A study of these factors as separate and isolated elements would be incomplete.Men alone, or machines alone, do not spell success: how men use machines in the combat environment, and the spirit of leadership that guides that use, spell victory or defeat. The motivation, dedication, and cohesion of a combat force are fundamental to any measure of capability and are, therefore, fundamental to attaining objectives and applying the principles of war effectively.

2-6. PRINCIPLES OF WAR

The principles of war represent generally accepted major truths which have been proved successful in the art and science of conducting war. Warfighting is an extremely complex activity involving differing circumstances and uncertainties. As a result, the relative importance among the warfighting

principles will vary with the situation. The following section discusses warfighting principles that have been demonstrated to be successful in past military operations, and, if disregarded, would presage a high degree of risk and possible failure in future military actions.

Principles of war have taken many forms and have been treated differently by various military communities. Some military scholars and philosophers would urge that the principles of war should be abandoned, while others would enshrine the principles of war as a roadmap to success in warfare. Neither view is entirely appropriate. The first view would ignore the educational and guiding influence of the principles of war, while the second view would tend to abuse the principles of war as some sort of recipe that supplants initiative and improvisation. All of the principles of war are interrelated and interacting elements of warfare. They are not separate and distinct entities from which a commander selectively chooses and applies to employing forces. Put in perspective, the principles of war help provide a better understanding of warfare, but they are not a series of checklist items that necessarily lead to victory. The principles of war are an important element of the art and science of warfare, but the understanding and mastery of this art requires a depth of knowledge far beyond mere principles. Accordingly, aerospace doctrine flows from these principles and provides mutually accepted and officially sanctioned guidelines to the application of these principles in warfare.

The most basic principle for success in any military operation is a clear and concise statement of a realistic **objective.** The objective defines what the military action intends to accomplish and normally describes the nature and scope of an operation. An objective may vary from the overall aim of a broad military operation to the desired outcome of a specific attack. The ultimate military objective of war is to neutralize or destroy the enemy's armed forces and his will to fight. However, the intimate bond which ties war to politics cannot be ignored. War is a means to achieving a political objective and must never be considered apart from the political end. Consequently, political imperatives shape and define military objectives. It follows that the objective of each military operation must contribute to the overall political objective.

Success in achieving objectives depends greatly on the knowledge, strategy, and leadership of the commander. The commander must ensure that assigned forces are properly used to attain the objective. This requires that objectives be disseminated and fully understood throughout all appropriate levels of command. Clear and concise statements of objective greatly enhance the ability of subordinates to understand guidance and take appropriate actions. For aerospace operations, the air commander develops his broad strategy based on the primary objective, mindful of the capabilities of friendly forces

(both man and machine), the capabilities and actions of the enemy, the environment, and sound military doctrine. Broad strategies, derived from this combination of factors, form the basis for selecting targets, means of attack, tactics of employment, and the phasing and timing of aerospace attacks. Always, the primary measure of success in employing aerospace forces is achieving the objective through the knowledgeable use of men and their machines.

Unless **offensive** action is initiated, military victory is seldom possible. The principle of offensive is to act rather than react. The offensive enables commanders to select priorities of attack, as well as the time, place, and weaponry necessary to achieve objectives. Aerospace forces possess a capability to seize the offensive and can be employed rapidly and directly against enemy targets. Aerospace forces have the power to penetrate to the heart of an enemy's strength without first defeating defending forces in detail. Therefore, to take full advantage of the capabilities of aerospace power, it is imperative that air commanders seize the offensive at the very outset of hostilities.

Surprise is the attack of an enemy at a time, place, and manner for which the enemy is neither prepared nor expecting an attack. The principle of surprise is achieved when an enemy is unable to react effectively to an attack. It is achieved through security, deception, audacity, originality, and timely execution. Surprise can decisively shift the balance of power. Surprise gives attacking forces the advantage of seizing the initiative while forcing the enemy to react. When other factors influencing the conduct of war are unfavorable, surprise may be the key element in achieving the objective. The execution of surprise attacks can often reverse the military situation, generate opportunities for air and surface forces to seize the offensive, and disrupt the cohesion and fighting effectiveness of enemy forces. Surprise is a most powerful influence in aerospace operations, and commanders must make every effort to attain it. Surprise requires a commander to have adequate command, control, and communications to direct his forces, accurate intelligence information to exploit enemy weaknesses, effective deception to divert enemy attention, and sufficient security to deny an enemy sufficient warning and reaction to a surprise attack.

Security protects friendly military operations from enemy activities which could hamper or defeat aerospace forces. Security is taking continuous, positive measures to prevent surprise and preserve freedom of action. Security involves active and passive defensive measures and the denial of useful information to an enemy. To deny an enemy knowledge of friendly capabilities and actions requires a concerted effort in both peace and war. Security protects friendly forces from an effective enemy attack through

defensive operations and by masking the location, strength, and intentions of friendly forces. In conducting these actions, air commanders at all levels are ultimately responsible for the security of their forces. Security in aerospace operations is achieved through a combination of factors such as secrecy, disguise, operational security, deception, dispersal, maneuver, timing, posturing, and the defense and hardening of forces. Security is enhanced by establishing an effective command, control, communications, and intelligence network. Intelligence efforts minimize the potential for enemy actions to achieve surprise or maintain an initiative; effective command, control, and communications permit friendly forces to exploit enemy weaknesses and respond to enemy actions.

Success in achieving objectives with aerospace power requires a proper balance between the principles of **mass** and **economy of force.** Concentrated firepower can overwhelm enemy defenses and secure an objective at the right time and place. Because of their characteristics and capabilities, aerospace forces possess the ability to concentrate enormous decisive striking power upon selected targets when and where it is needed most. The impact of these attacks can break the enemy's defenses, disrupt his plan of attack, destroy the cohesion of his forces, produce the psychological shock that may thwart a critical enemy thrust, or create an opportunity for friendly forces to seize the offensive. Concurrently, using economy of force permits a commander to execute attacks with appropriate mass at the critical time and place without wasting resources on secondary objectives. War will always involve the determination of priorities. The difficulty in determining these priorities is directly proportional to the capabilities and actions of the enemy and the combat environment. Commanders, at all levels, must determine and continually refine priorities among competing demands for limited aerospace assets. This requires a balance between mass and economy of force, but the paramount consideration for commanders must always be the objective. Expending excessive efforts on secondary objectives would tend to dissipate the strength of aerospace forces and possibly render them incapable of achieving the primary objective. Economy of force helps to preserve the strength of aerospace forces and to retain the capability to employ decisive firepower when and where it is needed most.

War is a complex interaction of moves and countermoves. **Maneuver** is the movement of friendly forces in relation to enemy forces. Commanders seek to maneuver their strengths selectively against an enemy's weakness while avoiding engagements with forces of superior strength. Effective use of maneuver can maintain the initiative, dictate the terms of engagement, retain security, and position forces at the right time and place to execute surprise attacks. Maneuver permits rapid massing of combat power and effective disengagement of forces. While maneuver is essential, it is not without risk. Moving large forces can lead to loss of cohesion and control.

Timing and tempo is the principle of executing military operations at a point in time and at a rate which optimizes the use of friendly forces and which inhibits or denies the effectiveness of enemy forces. The purpose is to dominate the action, remain unpredictable, and create uncertainty in the mind of the enemy. Commanders seek to influence the timing and tempo of military actions by seizing the initiative and operating beyond the enemy's ability to react effectively. Controlling the action may require a mix of surprise, security, mass, and maneuver to take advantage of emerging and fleeting opportunities. Consequently, attacks against an enemy must be executed at a time, frequency, and intensity that will do the most to achieve objectives. Timing and tempo requires that commanders have an intelligence structure that can identify opportunities and a command, control, and communications network that can responsively direct combat power to take advantage of those opportunities.

Unity of command is the principle of vesting appropriate authority and responsibility in a single commander to effect unity of effort in carrying out an assigned task. Unity of command provides for the effective exercise of leadership and power of decision over assigned forces for the purpose of achieving a common objective. Unity of command, combined with common doctrine, obtains unity of effort by the coordinated action of all forces toward a common goal. While coordination may be attained by cooperation, it is best achieved by giving a single commander full authority.

Unity of command is imperative to employing all aerospace forces effectively. The versatility and decisive striking power of aerospace forces places an intense demand on these forces in unified action. To take full advantage of these qualities, aerospace forces are employed as an entity through the leadership of an air commander. The air commander orchestrates the overall air effort to achieve stated objectives. Effective leadership through unity of command produces a unified air effort that can deliver decisive blows against an enemy, dissipate his strengths, and exploit his weaknesses. The air commander, as the central authority for the air effort, develops strategies and plans, determines priorities, allocates resources, and controls assigned aerospace forces to achieve the primary objective. Success in carrying out these actions is greatly enhanced by an effective command, control, communications, and intelligence network.

To achieve a unity of effort toward a common goal, guidance must be quick, clear, and concise—it must have **simplicity.** Simplicity promotes understanding, reduces confusion, and permits ease of execution in the intense and uncertain environment of combat. Simplicity adds to the cohesion of a force by providing unambiguous guidance that fosters a clear understanding of expected actions. Simplicity is an important ingredient in achieving victory, and it must pervade all levels of a military operation. Extensive and meticulous preparation in peacetime enhances the simplicity of an operation during the confusion and

friction of wartime. Command structures, strategies, plans, tactics, and procedures must all be clear, simple, and unencumbered to permit ease of execution. Commanders must strive to establish simplicity in these areas, and their peacetime exercise of forces must pursue that same goal. The promulgation and exercise of mutually accepted guidelines in peacetime enhances the ability of subordinates to comprehend the orders and directions of commanders during the stress of combat.

Logistics is the principle of sustaining both man and machine in combat by obtaining, moving, and maintaining warfighting potential. Success in warfare depends on getting sufficient men and machines in the right position at the right time. This requires that a simple, secure, and flexible logistics system be an integral part of an air operation. Regardless of the scope and nature of a military operation, logistics is one principle that must always be given attention. Logistics can limit the extent of an operation or permit the attainment of objectives. In sustained air warfare, logistics may require the constant attention of an air commander. This can impose a competing and draining demand on the time and energy of a commander, particularly when that commander may be immersed in making critical operational decisions. This competing demand will also impose a heavy burden on a command, control, and communications network. The information, mechanics, and decisions required to get men, machines, and their required material where and when they are needed is extensive and demanding. During intense combat, these logistics decisions may even tend to saturate the time and attention of a commander.

To reduce the stresses imposed by potentially critical logistics decisions, commanders must establish a simple and secure logistic system in peacetime that can reduce the burden of constant attention in wartime.

Effective logistics also requires a flexible system that can function in all combat environments and that can respond to abrupt and sudden change. For example, if weather or enemy activities force a move in operating locations, sustaining an air operation may depend on a logistics system that can respond to that exigency. Therefore, in preparing for war, air commanders must establish and integrate a logistics system that can keep pace with the requirements of air operations in combat. This requires a flexible logistics system that is not fixed, and one that can provide warfighting potential when and where it is needed.

Cohesion is the principle of establishing and maintaining the warfighting spirit and capability of a force to win. Cohesion is the cement that holds a unit together through the trials of combat and is critical to the fighting effectiveness of a force. Throughout military experience, cohesive forces have generally achieved victory, while disjointed efforts have usually met defeat. Cohesion depends directly on the spirit a leader inspires in his people, the shared experiences of a force in training or combat, and the sustained operational capability of a force. Commanders build cohesion through effective leadership and by generating a sense of common identity and shared purpose. Leaders

maintain cohesion by communicating objectives clearly, demonstrating genuine concern for the morale and welfare of their people, and employing men and machines according to the dictates of sound military doctrine. Cohesion in a force is produced over time through effective leadership at all levels of command.

2-7. BROAD PLAN OF EMPLOYMENT

An air commander develops a strategy for employing his forces in unified action based primarily on the objective. The air commander's strategy must also consider the capabilities of friendly forces, the capabilities and actions of the enemy, the environment, and a fundamental knowledge of the aerospace doctrine that describes the best way to use his forces. This strategy is then incorporated into a plan of employment that provides purpose and direction to the overall air effort.

This section emphasizes the imperatives of effectively using aerospace forces in warfare. It describes a broad plan of action which considers the arsenal of capabilities that an air commander can use to achieve victory. An air commander develops specific plans based on specific objectives, strategies, and situations, but a broad plan of action provides a perspective on the fundamental considerations that guide and influence the development of specific plans. The following paragraphs describe the aerospace perspective from which an air commander develops a broad plan to use his forces effectively, and the emphasize the considerations that influence an air commander's selected course of action. This doctrine provides the foundation for developing a bond of mutual understanding and common conviction between commanders and subordinates that is essential to coordinated action in combat.

EMPLOY AEROSPACE POWER AS AN INDIVISIBLE ENTITY BASED ON OBJECTIVES, THREATS, AND OPPORTUNITIES

Although the objective of conducting aerospace actions will remain fundamentally constant (to force an enemy to our will), the nature and scope of an operation may vary greatly depending on the details of a specific situation and the disposition and capabilities of an enemy. An air commander adjusts his plan to meet the requirements peculiar to a military action, but his guiding principle is to employ aerospace power as an indivisible entity based on objectives, threats, and opportunities. The effects and influences desired, balanced against threats and opportunities, determine the weight, phasing, and timing of aerospace actions. Successful integration of these considerations into a broad plan of employment is a complex task and a primary aim and responsibility of an air commander. An air commander's broad plan will normally include offensive strategic and tactical actions which are designed to control the aerospace environment and neutralize or destroy the warfighting

potential of an enemy. The warfighting potential of an enemy may include land, naval, and aerospace forces and the network used to control and support the employment of those forces. To gain the full potential of these actions, an air commander must coordinate and integrate his capabilities, give adequate attention to defensive as well as offensive actions, and weigh the psychological impact of his attacks.

CONDUCT SIMULTANEOUS STRATEGIC AND TACTICAL ACTIONS

An air commander develops a broad plan for employing aerospace forces to undertake strategic and tactical actions against the will and capabilities of an enemy. Strategic actions produce effects and influences which serve the needs of the overall war effort; tactical actions produce direct effects on the field of battle. The capacity for an enemy to wage war depends on the strengths of his forces and the will of the people to use those strengths. An enemy's will and capabilities are the fundamental elements of his warfighting potential. An air commander has the capability to attack this potential in depth through strategic and tactical aerospace actions.

Strategic actions normally involve attacks against the vital elements of an enemy's war sustaining capabilities and his will to wage war. Tactical actions are battle-related and normally urgent actions conducted against an enemy's massed or deployed forces, his lines of communication, and his command and control structures used to employ forces.

Strategic and tactical actions are not necessarily tied to specific geographic areas, operating environments, or types of vehicles. An air commander may employ any or all of his assigned forces to produce integrated strategic and tactical effects to support the overall objective. An air commander may conduct these actions unilaterally or with other component forces. Strategic and tactical actions are not mutually exclusive and to consider one in isolation of the other disregards their interdependence and their synergistic influence in warfare.

GAIN CONTROL OF THE AEROSPACE ENVIRONMENT

The first consideration in employing aerospace forces is gaining and maintaining the freedom of action to conduct operations against the enemy. An air commander usually gains this freedom by taking the necessary steps to control the aerospace environment. Control of the aerospace environment gives commanders the freedom to conduct successful attacks which can neutralize or destroy an enemy's warfighting potential.

Air superiority is . . . merely a means towards the end; it is the state in which the exercise of air power becomes possible.

Marshal of the Royal Air Force, Lord Tedder, 1947

Air Superiority Gives Freedom of Action. The campaign for control of the aerospace environment, or aerospace superiority, spans both strategic and tactical actions and is the first priority of aerospace forces. Aerospace superiority is achieved when aerospace forces have the freedom to effect planned degrees of destruction while denying that opportunity to the enemy. This campaign for control is a continuous attempt to gain and maintain the capability to use the enemy's airspace to perform our combat missions and to deny the enemy the use of our airspace. That is what control of the aerospace, or air superiority, means. Air superiority may be a relative situation, and it may occur in varying degrees. But this control is essential to executing successful attacks against an enemy and to avoiding unacceptable losses which could disintegrate the sustained combat effectiveness of a force.

Air Superiority Gives Tactical Flexibility. The most precious thing aerospace forces can provide for an army or navy is control of the aerospace environment, since this enables surface forces to carry out their own plan of action without interference from an enemy's aerospace forces. Without this control, tactical flexibility is lost. Sustained aerospace and surface operations are predicated on control of the aerospace environment. As a primary consideration, aerospace forces must neutralize opposing aerospace forces, including both aerospace and surface threats; otherwise, they cannot fully exploit their striking power to assist friendly surface forces. Aerospace superiority, therefore, is prerequisite to the success of land and naval forces in battle. The air commander's priority of operations must focus on this goal with the ultimate end being aerospace supremacy. Aerospace supremacy is that situation when a commander is free to employ his aerospace assets at a time and place of his choosing, and enemy forces are incapable of effective interference.

Gain Freedom of Action To Conduct Effective Strategic Attacks. Modern warfare has demonstrated the potential importance of strategic attacks against targets in an enemy's heartland. Attacks against heartland targets can produce benefits beyond the proportion of effort expended and costs involved. For this reason, an air commander must seize every opportunity to execute heartland attacks, but there are many considerations in taking these actions. These attacks may be limited by overriding political concerns, the intensity of enemy defenses, or more pressing needs on the battlefield.

Consequently, an air commander must balance the desired effects and influences against the threats and opportunities. He must determine that his planned attacks will support the overall objective, and that specific attacks will not impose an unacceptable attrition that could undermine the cohesion of his force and the ability to prevail until the overall objective is achieved. To enhance the success of these strategic attacks, an air commander must consider those efforts which provide the freedom to conduct effective operations in the enemy's airspace. This requires gaining freedom of action through a combination of factors such as speed, maneuverability, tactics, deception, efforts to dissipate or defer enemy defenses, and weapons characteristics and employment. Control of the aerospace environment, from this perspective, means combining these factors in a manner which will permit successful penetration of the threat environment.

ATTACK AN ENEMY'S WARFIGHTING POTENTIAL

Attacking an enemy's warfighting potential includes actions against the will of an enemy and actions to deny him the time and space to employ his forces effectively. This involves coordinated attacks against an enemy's warfighting potential not yet engaged and attacks against an enemy's forces in contact. In taking these actions, an air commander must consider the strengths and weaknesses of the enemy, the air actions that will most clearly deny enemy objectives, and the needs and requirements of friendly surface forces. Air commanders must base their strategic and tactical actions on these considerations, but always in the context of the overall objective.

Attack an Enemy in Depth. Integrated strategic and tactical actions produce a cumulative effect on the enemy's ability to wage war. Successful strategic attacks directed against the heartland will normally produce direct effects on an enemy nation or alliance. Its impact on the military forces engaged in tactical action, however, may be delayed because of the inherent momentum of forces actively engaged in combat and those reserve forces ready to enter the action. Consequently, an air commander must exploit the devastating firepower of airpower to disrupt that momentum and place an enemy's surface forces at risk. To do that, an air commander must attack not only those enemy forces in contact, but enemy forces in reserve or rear echelons as well. An air commander's in-depth attacks against these forces must include targeting an enemy's movement network (including his lines of communication) and his command and control structures used to guide the actions of enemy forces.

Attack the Enemy Relentlessly. Regardless of an enemy's will to fight on the field of battle, the stresses imposed by persistent and coordinated attacks

and the lack of needed logistics and command guidance can make it physically and psychologically difficult, if not unfeasible, to remain effective on the battlefield. Neutralizing or destroying rear echelon targets will generate stresses and strains on the enemy by limiting his mobility, disrupting his scheme of operation, and depleting his resources.

Plan and Coordinate Interdiction With Surface Forces. The strengths of the enemy in terms of forces, battle sustaining supplies, and combat reserves are most vulnerable to aerospace attack when concentrated, but these targets may be relatively secure when dispersed in their battle areas. While the urgency of enemy actions may require direct attacks against forces in contact, efficient use of air forces should emphasize attack in depth upon those targets that deny the enemy the time and space to employ forces effectively. The effect of these attacks is profound when the enemy is engaged in a highly mobile, maneuver scheme of operation dependent on urgent resupply of combat reserves and consumables. Air and surface commanders should take actions to force the enemy into this intense form of combat with a systematic and persistent plan of attack. The purpose is to make the enemy react in a predictable manner and to generate situations where friendly surface forces can then take advantage of forecast enemy reactions. This systematic and persistent plan of attack should be considered a continuum that exerts a connected series of actions and reactions that are closely coordinated between air and surface commanders. Although battlefield situations may interrupt this plan of attack, air and surface commanders must remain committed to their coordinated actions and must not allow the full impact of aerospace power to be diverted away from the main objective.

Continually Assess the Operational Situation. The proportion of aerospace effort devoted to attacks on an enemy's sources of power and his deployed forces is contingent on the operational situation. Success in one sphere of military operations but defeat in others could have an adverse effect on the overall prosecution of the war. Therefore, a coordinated plan must always have the flexibility to respond to the most urgent and important needs of the war effort. To know those needs, an air commander must continuously assess the operational situation and identify where and when both strategic and tactical actions can be used most productively. This requires an air commander to exploit his information gathering resources and to implement a system that can collate and assess that information. Accurate assessments allow an air commander to anticipate, initiate, and redirect efforts. They are essential to conducting tactical and strategic attacks against an enemy. One important by-product of effective tactical attacks against the enemy in the field is time: the time given to friendly forces to react and seize or maintain the offensive; and conversely, the time lost to enemy forces to achieve their goals or implement their plans. Furthermore, as strategic attacks take effect, an enemy may be forced into the situation where he must resort to employing

his remaining aerospace forces defensively, thereby reducing his ability to sustain offensive operations. Continual assessment aids an air commander in identifying what needs to be done and orchestrating a coherent and flexible course of action to meet those needs.

Close Support Can Create Opportunities, Protect Maneuver, and Defend Land Forces. The success of both offensive and defensive surface operations can depend greatly on massing aerospace firepower at decisive points. Effective actions to gain aerospace superiority and to interdict an enemy can limit the flexibility of his forces, deny him reinforcements, and enhance opportunities for friendly surface commanders to seize the initiative through counter-offensive action. Close support can enhance counter-offensive actions by creating opportunities to break through enemy lines, protecting the flanks of a penetration; or preventing the counter-maneuver of enemy surface forces. Defensive requirements to blunt an enemy offensive may also dictate the need for close support of surface forces. Close support can protect the maneuver and withdrawal of surface forces, protect rear area movements, or create avenues of escape.

Attack Enemy Warfighting Potential at Sea. Aerospace forces can conduct a variety of strategic and tactical actions which can directly or indirectly enhance an overall naval operation. The actions may include protecting friendly naval forces, facilities, and shipping (attacking air bases or providing air defense), destroying enemy naval forces and shipping (anti-ship attacks or aerial mine-laying), revealing enemy naval activities and intentions (surveillance and reconnaissance), and supporting amphibious operations (air cover or close support).

CONSIDER BOTH OFFENSIVE AND DEFENSIVE ACTION

In military operations, decided advantages can accrue to an attacker over a defender. The attacker is able to exercise the initiative as to time, place, strength, and method of attack, while the defender is forced to prepare for all eventualities. Aerospace forces take greater advantage of their characteristics and their operating medium through offensive actions.

> The speed and flexibility of air operations puts a premium on gaining and keeping the initiative. Of air warfare, if anything, is the old adage true—that offence is the best defence.
>
> Marshal of the Royal Air Force, Lord Tedder, 1947

Seize the Initiative. Although adequate defenses are required in aerospace operations, there are pronounced vulnerabilities to placing the preponderance of an aerospace force in a reactive posture (postured on ground alert or orbiting on airborne alert), persistently waiting for enemy initiatives. An attacking aerospace force can quickly mass intense and devastating attacks that can preoccupy a defender's attentions and actions, even to the extent of deferring an enemy's offensive forces primarily to defensive actions. When an aerospace force is primarily reactive, an air commander can reverse this disadvantage only by taking offensive actions which will compel an enemy to react rather than initiate. Offensive aerospace action denies the enemy the flexibility to concentrate his entire effort to an attack, and it gives to friendly forces the flexibility, initiative, and opportunity to control the timing and tempo of action. Seizing the initiative is then the primary offensive-defensive consideration. It is central to forcing an enemy to our purpose. Offensive, then, becomes a function of surprise, deception, flexibility, maneuver, and timing and tempo to gain and maintain the initiative, while defensive becomes a function of those security actions necessary to preserve that initiative.

Defense Protects Initiative. Defensive actions must be designed primarily to protect an air commander's capability to seize the initiative. Even when the enemy has the initial advantage, an air commander must take all possible actions to retaliate and regain the offensive. These offensive-defensive considerations influence how a commander structures his forces and the actions he takes to overcome an enemy's ability to resist.

Structure Forces With Flexibility. To retaliate against an aggressor, air commanders must give adequate attention to both offensive and defensive capabilities. An adequate defense protects forces and gives the security to conduct future offensive actions. Without adequate defenses, the ability to retaliate becomes mostly a function of extensive and duplicated offensive forces, which normally represents a costly and often ineffective alternative to an adequate defense. Therefore, a commander must develop an adequate mix of offensive and defensive capabilities. The overall capability of an aerospace force is greatly enhanced when the preponderance of that force has the flexibility to perform both actions.

Force the Enemy To React. Offensive and defensive considerations dictate certain priorities of attack for an air commander. For example, an air commander must make a concerted effort, at the very outset of hostilities, to attack an enemy's aerospace forces at their source as part of his actions to prevent similar attacks against his forces. Once an air commander seizes the initiative, he maintains it with planned attacks that force the enemy to remain reactive. To ensure that subsequent attacks produce this effect

requires an air commander persistently to survey and assess the actions and defenses of an enemy.

Respect the Flexibility of Enemy Forces. While it is true that offensive actions provide advantages to the attacker, subsequent assaults can dissipate that advantage, especially when the target or destination is obvious or when an enemy elects to guard a vital target with intense defenses. In assessing potential enemy actions, commanders must never discount the flexibility of enemy forces. The enemy can concentrate his defensive forces and will likely do so if he is alerted or anticipates an offensive. Therefore, deception, security, and surprise are essential considerations to offensive attacks.

EXPLOIT THE PSYCHOLOGICAL IMPACT OF AEROSPACE POWER

Know the Enemy. The effect and influence of air actions can produce emotional responses in the armed forces and the people of a nation or alliance. These responses, depending upon how a commander employs aerospace forces, can be of a positive or negative nature. By carefully considering the social structure of a nation or alliance, commanders can exploit those elements of the enemy's structure that may divide or undermine unity of purpose, generate internal strife, or force a political or military change in objectives. Exploiting the enemy can take many forms.

Exploit the Enemy. Surprise attacks can have a devastating impact on an enemy, disrupting his plan of action and creating confusion or loss of cohesion in enemy forces. Surprise attacks can shift the balance of power and urge an enemy to abandon his objectives and even sue for peace. But commanders must anticipate the impact and potential of all attacks or support actions. Knowing the social and cultural makeup of an enemy allows a commander to tailor actions to create distrust among allies or dissipate faith in political and military leadership. This could include such actions as conducting sabotage or other special operations, isolating or separating elements of a force, selecting a particular weapon for its psychological effect, or surgically attacking or avoiding certain military or industrial targets. Therefore, commanders should always consider the psychological impact of air actions to ensure that those actions support the overall objective and that the full influence of air power will produce the desired effect.

DEVELOP A COHERENT PATTERN FOR EMPLOYING FORCES

Aerospace forces possess a wide array of unique capabilities that can produce specific effects and influences in strategic and tactical action. These capabilities include systems to expose an enemy's vulnerabilities, reveal his intentions, weaken his resolve, and engage and attack his warfighting potential. Aerospace forces can observe and assess enemy activities, warn of impending attacks, confuse and deceive an enemy, and dissipate an enemy's strengths. Aerospace forces also provide mobility to friendly forces and the capability to extend the support, influence, and effect of air and surface forces. Therefore, central to an air commander's broad plan of action is a coherent and coordinated pattern for employing forces that takes advantage of the inherent flexibility and capabilities of aerospace power. Even in the absence of direct communications, this pattern provides a systematic approach that gives order, consistency, and direction to effective air actions against an enemy. The purpose is to execute coherent, coordinated, and effective aerospace warfare; it is not to establish a predictable routine that can be exploited by an enemy.

Within a broad plan of action an air commander uses a pattern for employing his forces based on objectives, threats, and opportunities. The pattern of employment represents a continuous process (see figure 2-1) that goes from seeing what needs to be done to actually doing it. Within this pattern, the air commander coordinates and integrates strategic and tactical actions to seize the offensive and protect that initiative. The pattern of employment provides the structure and process for an air commander to conduct effective aerospace warfare.

Throughout the process of taking these actions, an air commander has specific authorities and responsibilities. As a specified air commander, he makes apportionment decisions on where the overall weight of effort will go. As an air component commander, he makes apportionment recommendations. Both air commanders select targets, allocate resources, task units, and delegate the authority to execute specific actions to subordinate commanders. An air commander carries out these actions using centralized control at the decision level and decentralized execution at the action level. This control-execution relationship is discussed below and in chapter 4. It is also the control mechanism that allows an air commander to coordinate an integrated air defense effort and to coordinate the cooperative and effective use of friendly airspace.

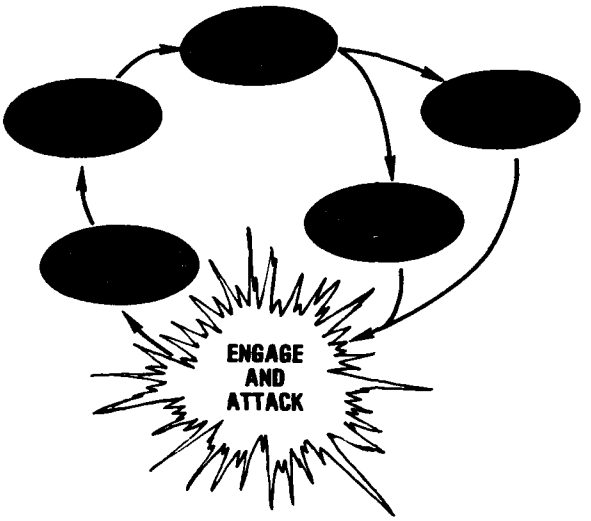

Figure 2-1. Pattern of Employment.

SURVEY battle actions to identify threats and opportunities with both wide area surveillance and focused surveillance and reconnaissance of specific target areas.

ASSESS what needs to be done to meet objectives and establish priorities by correlating and analyzing surveillance and reconnaissance data to provide commanders with a picture of the unfolding battle.

COMMAND forces and implement decisions on how, when, and what assets will be used to attack the enemy.

GENERATE ASSETS in sufficient strength and time to carry out required actions.

CONTROL and coordinate the actions of forces executing attacks to give direction to the overall effort and to assist weapon systems in the engage and attack phase.

ENGAGE AND ATTACK the enemy.

EVALUATE RESULTS and continue the process until objectives are achieved.

ESTABLISH ONE AUTHORITY FOR AIR DEFENSE AND AIRSPACE CONTROL

An air commander normally functions as the central authority for air defense and airspace control. Having one commander assigned the responsibility and authority to coordinate and integrate air defense and airspace control greatly enhances the effort to gain and maintain control of the aerospace environment. This permits an air commander to coordinate and integrate air and surface defenses to thwart an enemy attack. Integrated air and surface defenses greatly complicate an enemy's efforts to conduct successful air offensives. A central authority for air defense and airspace control allows an air commander to mass defenses where and when they are needed most and helps to prevent dissipating defensive resources on secondary targets or duplicated efforts. Through central authority, an air commander gives unity and coherency to the defensive effort and to controlling the aerospace environment. The planned and coordinated use of airspace gives flexibility to the self-defense of surface forces and helps prevent inadvertent attacks on friendly forces. Coordinated air defense and airspace control also aid the execution of offensive attacks against an enemy's warfighting potential. To undertake these actions and execute a plan for employing forces require an effective network for command, control, communications, and intelligence.

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

An air commander's ability to conduct air warfare is enhanced by effective command and control of his assigned forces, reliable communication with those forces, and a timely and accurate intelligence system that can survey and assess battle actions and the combat environment in which man and machine will be used. These functions allow an air commander to respond better to the needs of specific battles and to the imperatives of the overall war effort.

Structure Effective Command and Control. Commanders, at every level, are better equipped to make correct decisions and to implement those decisions when they have an effective command and control structure that is simple, secure, and based on unity of command. This structure must provide the mechanism to survey and assess the battlefield situation accurately and to conduct offensive and defensive air actions to achieve objectives. Effective command and control provides commanders with the status and capabilities of both friendly and enemy forces and allows a commander to direct an air effort knowledgeably and efficiently. The most effective means for directing and executing an air effort is centralized control and decentralized execution.

Centralize Control and Decentralize Execution. Centralized control-decentralized execution helps to make aerospace forces responsive, serves to ensure that forces are properly used and integrated, and fosters initiative at

the action level. Centralized control allows an air commander to focus an air effort on those priorities which will lead to victory. The air effort will normally involve a mix of offensive actions and defensive actions based on specific objectives, threats, and opportunities. Through centralized control, an air commander gives coherency, guidance, and organization to the air effort. While centralized control guides actions to support a broad plan of action, decentralized execution provides the flexibility for subordinate commanders to use ingenuity and initiative in attacking targets.

Simplify and Secure Communications. Commanders rely on simple, secure, and effective communications. Communications are the means through which a commander transmits and receives information about the enemy, coordinates with friendly forces, and commands and controls assigned forces. Both indirect and direct communications help a commander to influence the flow of battle. Mutually accepted guidelines, or aerospace doctrine, provide the indirect communication and guidance necessary to continue the battle plan and enhance a unified effort. Thorough knowledge and use of these guidelines is particularly important when the friction of combat prevents timely direct communication between commanders and subordinates. Effective direct communications enhance the flow of information within the command and control structure and increase the commander's ability to coordinate battle plans and to execute timely and accurate air actions. Indirect and direct communications are essential to centralized control and decentralized execution.

Acquire Accurate and Timely Intelligence. The effective and efficient use of aerospace forces depends greatly upon accurate and timely intelligence assessment. Throughout strategic and tactical actions, there is a constant demand for detailed and timely intelligence about the enemy and his military forces. Aerospace forces have a unique capacity, far beyond the scope of surface forces, to acquire intelligence information. An intelligence system must acquire, process, and dispatch information gained from a variety of sources in time for decision makers to assess what needs to be done and take appropriate actions. Useful, timely intelligence prevents surprise and enhances opportunities to seize the initiative.

Obtain Accurate Environmental Information. Accurate and up-to-date environmental information enhances the commander's ability to conduct effective strategic and tactical operations. Aerospace forces gather meteorological and exoatmospheric data, analyze it, and provide it as environmental information to plan and implement air and surface operations. During war, weather information becomes an integral part of the decision process in the employing of forces, even to the selection of weapon systems, routes, targets, and delivery tactics.

Chapter 3

Missions and Specialized Tasks

Chapter 3
MISSIONS AND SPECIALIZED TASKS

> The airplane is the only weapon which can engage with equal facility, land, sea, and other air forces for the destruction of the enemy's will to fight.
>
> Major General Frank M. Andrews, 1938

3-1. INTRODUCTION

The National Security Act of 1947 established that the Air Force "shall be organized, trained, and equipped to perform prompt and sustained offensive and defensive air operations." The Air Force prepares aerospace forces to perform offensive and defensive operations with the purpose of defending the United States, deterring aggression, and being ready to conduct warfare to support national objectives. The Air Force describes the specific elements of these actions in its missions and specialized tasks. Missions and specialized tasks provide a common dialogue for how the Air Force prepares its forces and how the combatant commands employ those forces. Missions and specialized tasks have historical foundations and represent a list of aerospace actions that have evolved since the first use of aircraft in warfare. The missions and specialized tasks also interpret how the Air Force will perform its responsibilities and functions as assigned by the Department of Defense.

3-2. RESPONSIBILITIES AND FUNCTIONS

Department of Defense Directive (DODD) 5100.1, *Functions of the Department of Defense and Its Major Components*, gives guidance on Service responsibilities and functions. Each of the Services is tasked "to organize, train, and equip forces for assignment to Unified and Specified Commands." DODD 5100.1 also assigns primary and collateral functions to each of the Services. Primary functions are those assigned actions for which a particular Service is mainly responsible, and collateral functions are those assigned actions where one Service performs a primary function of another Service. For example, the collateral functions of the Air Force are to: interdict enemy sea power through air operations, conduct antisubmarine warfare and protect shipping, and conduct aerial mine-laying. Primary and collateral functions may be performed unilaterally or in conjunction with the forces of another Service. DODD 5100.1 and other policy documents, such as the *Defense Guidance*, help to guide the Air Force in preparing its forces. The Air Force missions

and specialized tasks represent the most current guidance on those assigned military responsibilities and functions for which the Air Force must prepare forces.

3-3. AIR FORCE MISSIONS

Air Force missions describe broad military objectives attained by employing aerospace forces. These interdependent missions produce specific effects and influences in deterring war, defending the United States and its allies, and conducting warfare. Air commanders may accomplish these interdependent missions unilaterally or with other Service forces. The fundamental role of the Air Force is to prepare aerospace forces to accomplish these missions:

Strategic Aerospace Offense
Strategic Aerospace Defense
Counter Air
Air Interdiction
Close Air Support
Special Operations
Airlift
Aerospace Surveillance and Reconnaissance
Aerospace Maritime Operations

STRATEGIC AEROSPACE OFFENSE objectives are to neutralize or destroy an enemy's war-sustaining capabilities or will to fight. Aerospace forces may conduct strategic aerospace offense actions, at all levels of conflict, through the systematic application of force to a selected series of vital targets. Attacks are directed against an enemy's key military, political, and economic power base. Strategic aerospace offense targets may include: concentrations of uncommitted elements of enemy armed forces, strategic weapon systems, command centers, communications facilities, manufacturing systems, sources of raw material, critical material stockpiles, power systems, transportation systems, and key agricultural areas. Strategic aerospace offense may involve projection of power, with limited or massive application of force, or merely positioning of force as a threat to achieve a desired objective.

STRATEGIC AEROSPACE DEFENSE objectives are to integrate aerospace warning, control, and intercept forces to detect, identify, intercept, and destroy enemy forces (in any medium) attacking our nation's war sustaining capabilities or will to fight. Our strategic aerospace defense forces provide warning and assessment of strategic attack to the National Command Authorities through an extensive network of warning sensors, both on the Earth's surface and throughout the aerospace. This Air Force mission enhances the survivability of strategic aerospace offensive forces and protects our key military, political, and economic power base.

COUNTER AIR objectives are to gain control of the aerospace environment. Counter air operations protect friendly forces. ensure our freedom to use the aerospace environment to perform our other missions and tasks, and deny the use of that environment to an enemy. The ultimate goal of counter air is air supremacy.

Offensive Counter Air (OCA). Aerospace operations conducted to seek out and neutralize or destroy enemy aerospace forces at a time and place of our choosing. These operations are essential to gaining aerospace superiority and providing the favorable situation which allows us to perform our other missions. Offensive counter air is designed to secure this situation by seizing the offensive at the initiation of hostilities, conducting operations in the enemy's aerospace environment, and neutralizing or destroying the enemy's aerospace forces and the infrastructure supporting his aerospace operations.

Suppression of Enemy Air Defenses (SEAD). Aerospace operations which neutralize, destroy, or temporarily degrade enemy air defensive systems in a specific area by physical and/or electronic attack. The goal of SEAD operations is to provide the favorable situation which allows friendly aerospace forces to perform their other missions effectively without interference from enemy air defenses.

Defensive Counter Air (DCA). Aerospace operations conducted to detect, identify, intercept, and destroy enemy aerospace forces that are attempting to attack friendly forces or penetrate friendly airspace. These operations defend friendly lines of communication, protect friendly bases, and support friendly land and naval forces while denying the enemy the freedom to carry out offensive operations.

AIR INTERDICTION (AI) objectives are to delay, disrupt, divert, or destroy an enemy's military potential before it can be brought to bear effectively against friendly forces. These combat operations are performed at such distances from friendly surface forces that detailed integration of specific actions with the fire and movement of friendly forces is normally not required. Air interdiction attacks are usually executed against enemy surface forces, movement networks (including lines of communication), command, control, and communications networks, and combat supplies. Interdiction of the enemy can delay the arrival or buildup of forces and supplies, disrupt the enemy's scheme of operation and control of forces, divert valuable enemy resources to other uses, and destroy forces and supplies.

Air interdiction attacks are normally executed by an air commander as part of a systematic and persistent campaign. Although an air interdiction campaign can be an independent air effort, an air commander normally coordinates an interdiction campaign with a surface force commander. An air interdiction campaign is developed to limit the enemy's mobility to maneuver forces, while forcing the enemy into high rates of consumption, and to create

opportunities for friendly forces to exploit the disabilities produced by interdiction attacks. The weight, phasing, and most importantly, the timing of interdiction attacks can provide friendly forces the time or opportunity to seize the initiative and deny that same opportunity to an enemy.

Air interdiction attacks against targets which are in a position to have a near term effect on friendly land forces are referred to as battlefield air interdiction. The primary difference between battlefield air interdiction and the remainder of the air interdiction effort is the level of interest and emphasis the land commander places on the process of identifying, selecting, and attacking certain targets. Therefore, battlefield air interdiction requires joint coordination at the component level during planning, but once planned, battlefield air interdiction is controlled and executed by the air commander as an integral part of a total air interdiction campaign.

CLOSE AIR SUPPORT objectives are to support surface operations by attacking hostile targets in close proximity to friendly surface forces. Close air support can support offensive, counter-offensive, and defensive surface force operations with preplanned or immediate attacks. All preplanned and immediate close air support missions require detailed coordination and integration with the fire and maneuver plans of friendly surface forces. Close air support missions require access to the battlefield, timely intelligence information, and accurate weapons delivery.

Close air support enhances surface force operations by providing the capability to deliver a wide range of weapons and massed firepower at decisive points. Close air support can surprise the enemy, create opportunities for the maneuver or advance of friendly forces through shock action and concentrated attacks, protect the flanks of friendly forces, blunt enemy offensives, and protect the rear of surface forces during retrograde maneuvers.

SPECIAL OPERATIONS objectives are to influence the accomplishment of strategic or tactical objectives normally through the conduct of low visibility, covert, or clandestine military actions. Special operations are usually conducted in enemy controlled or politically sensitive territories and may complement general purpose force operations.

Virtually all aerospace forces have the potential for employment in special operations. Additionally, the Air Force organizes, trains, and equips unique units to conduct special operations as their primary mission. To execute special operations, forces are normally organized and employed in small formations capable of both supporting actions and independent operations, with the purpose of enabling timely and tailored responses throughout the spectrum of conflict. Special operations forces may conduct and/or support unconventional warfare, counterterrorist operations, collective security, psychological operations, certain rescue operations, and other mission areas such as interdiction or offensive counter air operations.

AIRLIFT objectives are to deploy, employ, and sustain military forces through the medium of aerospace. The airlift mission is performed under varying conditions, ranging from peace to war. As a combat mission, airlift projects power through airdrop, extraction, and airlanding of ground forces and supplies into combat. Through mobility operations, the joint or combined force commander can maneuver fighting forces to exploit an enemy's weaknesses. As a combat support mission, airlift provides logistics support through the transportation of personnel and equipment. In peacetime, airlift provides the opportunity to enhance national objectives by providing military assistance and civilian relief programs. Airlift, therefore, accomplishes the timely movement, delivery, and recovery of personnel, equipment, and supplies, furthering military and national goals.

Airlift may be performed from a strategic or tactical perspective. Strategic (intertheater) airlift transcends the boundary of any one theater and is executed under the central direction of higher authority, normally in support of a more pervasive or overall effort. In contrast, tactical (intratheater) airlift is performed within a theater of operations and supports theater objectives through the rapid and responsive movement of personnel and supplies.

AEROSPACE SURVEILLANCE AND RECONNAISSANCE objectives are to collect information from airborne, orbital, and surface-based sensors. Air Force surveillance and reconnaissance efforts are a part of our national intelligence gathering and systematic observation process. These operations provide a wide variety of information that is key to the development of national security policy, force postures, planning actions, force employment, and informed responses in times of crisis.

Surveillance operations collect information continuously from the aerospace, and from the Earth's surface and subsurface. Reconnaissance operations are directed toward localized or specific targets. Through surveillance and reconnaissance, we can collect varied data, such as meteorological, hydrographic, geographic, electronic, and communications characteristics, on any given area of the Earth's surface. The products of reconnaissance and surveillance operations have strategic and tactical applications in both peace and war. Strategic and tactical surveillance and reconnaissance provide timely notification of hostile intent and actions as well as other information vital to the National Command Authorities and combat commanders. These operations are instrumental in identifying the composition and capability of enemy and potentially hostile forces. As a result, we can assess the total capability of foreign nations to conduct war and tailor our forces effectively to counter the threat.

AEROSPACE MARITIME OPERATIONS objectives are to neutralize or destroy enemy naval forces and to protect friendly naval forces and shipping. Aerospace maritime operations may consist of counter air operations, aerial minelaying, reconnaissance and surveillance, and interdiction of enemy

naval surface and subsurface forces, port facilities, and shipping. Although composed of certain aspects of other aerospace missions, this mission is made unique primarily by the character of its objectives, the threat, and the forces involved. Aerospace maritime operations may be performed unilaterally or in coordination with friendly naval forces, integrating the unique capabilities of aerospace and naval forces in operations against a common threat or in the accomplishment of a common objective.

3-4. AIR FORCE SPECIALIZED TASKS

The Air Force performs specialized tasks to enhance the execution and successful completion of Air Force missions. These specialized tasks often support the accomplishment of other Services' missions as well. The Air Force prepares forces to conduct the following specialized tasks:

Aerial Refueling
Electronic Combat
Warning, Command, Control, and Communications
Intelligence
Aerospace Rescue and Recovery
Psychological Operations
Weather Service

AERIAL REFUELING. A specialized task performed by aerospace forces to support strategic, tactical, and mobility operations by extending the range, payload, and flexibility of these operations through aerial refueling. Aerial refueling has a vital role across the spectrum of employment strategies. Refueling allows the strategic bomber and tactical fighter force to strike the heartland of any would-be aggressor on a world-wide basis, and still recover at friendly bases. Its inherent flexibility enables the refueling force to assist in the rapid deployment and employment of conventional forces and to furnish logistic support to friendly nations. The aerial refueling force helps enhance our global power by reducing our dependence on forward basing and foreign enroute bases. Aerial refueling also extends the range, station time, mobility, and flexibility of theater forces.

ELECTRONIC COMBAT (EC). A specialized task performed by aerospace forces to control selected parts of the electromagnetic spectrum in support of strategic and tactical operations. Electronic combat involves actions to protect friendly electromagnetic capabilities and actions to neutralize or destroy the enemy's electromagnetic capabilities. The purpose is to enhance the ability of our warfighting systems to achieve objectives, since the use of the electromagnetic spectrum can have a major impact on the success or failure of military operations.

EC includes electronic warfare (EW), as well as elements of command, control, and communications countermeasures (C^3CM) and suppression of enemy air defenses (SEAD). EW is military action using electromagnetic

energy to determine, exploit, reduce, or prevent hostile use of the electromagnetic spectrum and also includes actions designed to retain the friendly use of that spectrum. C^3CM is military action involving defensive and offensive operations in a strategy that is designed to deny information to an enemy, to protect friendly C^3, to influence enemy actions, and to degrade or destroy enemy C^3 capabilities. C^3CM, supported by intelligence operations, integrates the use of operations security, military deception, jamming, and physical destruction. SEAD, as an essential element of the Counter Air mission, is aimed at gaining freedom of action to perform Air Force missions by neutralizing, destroying, or temporarily degrading enemy air defense systems. EC contributes heavily to SEAD in counter air objectives.

WARNING, COMMAND, CONTROL, AND COMMUNICATIONS. A specialized task performed by aerospace forces in support of strategic and tactical operations to provide the National Command Authorities and operational commanders in the field with warning and characterization of an actual or impending enemy attack, and the command and control of forces through the sustained ability to communicate with those forces.

INTELLIGENCE. A specialized task performed by aerospace forces to acquire, correlate, analyze, and apply intelligence data. Timely and accurate intelligence is essential to decisionmaking because it provides an assessment of what the enemy is getting ready to do, and indications on how, when, and where he may do it. Intelligence reduces the risk of surprise and enhances operational effectiveness. Intelligence enables effective direction, control, and employment of Air Force weapon systems by providing essential information for deciding how, when, and where the enemy should be engaged and attacked.

AEROSPACE RESCUE AND RECOVERY. A specialized task performed by aerospace forces to rescue downed combat aircrew personnel. These actions preserve and return to duty critical combat resources, deny an enemy a possible source of intelligence, and contribute to the morale and motivation of combat aircrews.

PSYCHOLOGICAL OPERATIONS. A specialized task performed by aerospace forces to support national objectives by influencing the attitudes and behavior of hostile, neutral, or friendly groups. All Air Force commands and agencies are responsible for the conduct or support of psychological operations. In planning and executing operations, commanders should consider the psychological implications and opportunities inherent in every action, and they must make a concerted effort to ensure that the signals transmitted are perceived as intended. Both action and inaction may communicate information which can exert influence and may be used to reinforce our actions, to enhance perceptions of our capabilities, or to influence others to support our objectives. Depending on the medium of communications, national objectives, and planned actions, various psychological

effects can be created to reinforce operations by: planned communications through electronic means or printed material; a show of force or demonstrations of superiority; an attack on a specific, significant target for psychological effect; actions to harass and disrupt enemy operations; surprise, shock action, and deception; or humanitarian operations.

WEATHER SERVICE. A specialized task performed by aerospace forces to provide timely and accurate environmental information to support strategic, tactical, and mobility operations. Weather service gathers, analyzes, and provides meteorological and exoatmospheric data for mission planning and execution. Environmental information is an essential factor in conducting both aerospace and surface operations. The environmental information provided by weather service directly influences the decision process for employing forces, including the selection of weapon systems, routes, targets, and delivery tactics.

Chapter 4

Organizing, Training, Equipping, and Sustaining Aerospace Forces

Chapter 4

ORGANIZING, TRAINING, EQUIPPING, AND SUSTAINING AEROSPACE FORCES

> We see clearly that the activities characteristic of war may be split into two main categories: those that are merely preparation for war, and war proper. The same distinction must be made in theory as well . . . . The knowledge and skills involved in the preparation will be concerned with the creation, training, and maintenance of the fighting forces . . . . The theory of war proper, on the other hand, is concerned with the use of these means, once they have been developed, for the purpose of the war.
>
> Carl Von Clausewitz

4-1. INTRODUCTION

The United States Air Force, including both uniformed and civilian personnel, consists of the Regular Air Force, the Air National Guard, and the Air Force Reserve and is organized into major commands based on strategic, tactical, and mobility operations and the functional support of these warfighting operations. The Department of the Air Force, through its major commands, organizes, trains, equips, sustains, and provides operationally ready forces and their support elements to the unified and specified commands. These combatant commands, in turn, are tasked to employ these forces. The major commands are subdivided into operating units: numbered air forces, air divisions, wings, groups, squadrons, and other specialized units. When Air Force forces are provided to the combatant commands, they are employed through an air commander as cohesive fighting units and retain their unit identity and functional integrity.

4-2. ORGANIZING AEROSPACE FORCES

Air Force forces are organized to provide effective combat power to the combatant commands. Our forces are directed through command arrangements that provide the precise control that focuses our efforts on the objective. Successful military operations depend on a unity of command to integrate efforts and to achieve the control needed to attain military objectives. This must be built into a command through the structure of the organization.

> In wars involving two or more Services on the same side, command and control of assigned forces has been controversial. . . . The reason for the controversy is fairly straightforward: the flexibility of airpower and its capacity to concentrate large quantities of firepower in a short time make it a most desirable addition to an army or navy. As a consequence, these two forces have sought the division of airpower, placing it under their control when needed for their own mission. Airmen, on the other hand, have argued that airpower is a decisive element of war in its own right and that the full effects of airpower can only be achieved when it is centrally controlled and directed against the most vital part of the enemy, whether that part be the industrial base or the military forces deployed to a theater of war. They contend that the fundamentals for directing and using airpower are the same regardless of the strategy for the prosecution of the war. Thus, for airpower to be employed for the greatest good of the combined forces in a theater of war, there must be a command structure to control the assigned airpower coherently and consistently and to ensure that the airpower is not frittered away by dividing it among army and navy commands.
>
> General William W. Momyer, 1978

Unity of command requires a clear statement of command arrangements and responsibilities. *Each command* must be structured to ensure rapid decision-making and implementation. There must be a single commander at each level in the chain of command, and each commander must know what is expected of his command. Guidance should be precise at each echelon in the chain of command. Each commander must have enough latitude to maintain the initiative and ensure the integrity of his command.

A commander must have a clear understanding of the developing battle to direct forces toward an objective. This requires a structure that allows a commander to survey the battle situation, assess what actions to take, and to coordinate and integrate forces to engage and attack the enemy. An air commander directs, coordinates, and integrates the air effort through control of his assigned forces. Control orchestrates the action, increases the cohesion of aerospace operations, and multiplies the overall impact of aerospace forces. It consists of an organization of command that clearly assigns responsibility, along with commensurate authority, to ensure the prompt transmission of assigned actions. Control enables commanders to adjust their plans and use the capabilities of aerospace power to surprise the enemy and disrupt enemy battle plans. For aerospace forces, this is accomplished most effectively through centralized control and decentralized execution.

Centralized control is essential to positive control of aerospace power. Centralized control is established under a single air commander who directs the employment of forces at a level of command from which the overall air situation can best be judged. This level of authority and responsibility rests

with the commander in chief in specified commands and with the air component commander in unified or combined commands. Under this concept, aerospace operations are appropriately executed at the most effective level. This is decentralized execution. An air commander assigns missions and tasks and directs lower echelons to execute operations. This relationship allows the air commander to focus his attentions and energies to the direction of operations towards the overall objective, while subordinate commanders develop tactics and execute specific missions. This arrangement in no way limits the air commander's authority nor lessens his responsibility; it places details for mission planning and responsive execution at the action level.

ORGANIZE FOR WAR IN PEACETIME

Command structures are developed to ensure the effective employment of forces in war or other crises. These structures are developed and exercised in peacetime to ensure a smooth transition from normal conditions to crises situations. To function effectively in war, organizations, procedures, and channels of communication must be exercised in peacetime on a daily basis and in formal simulated and live exercises. Commanders must organize and exercise forces as they intend to fight.

UNIFIED ACTION

US military forces are normally assigned or attached to specified and unified commands (including subordinate unified commands). Forces within these commands report to a single commander. There are two separate and distinct chains of command which distinguish between operational authority and Service authority (see figure 4-1).

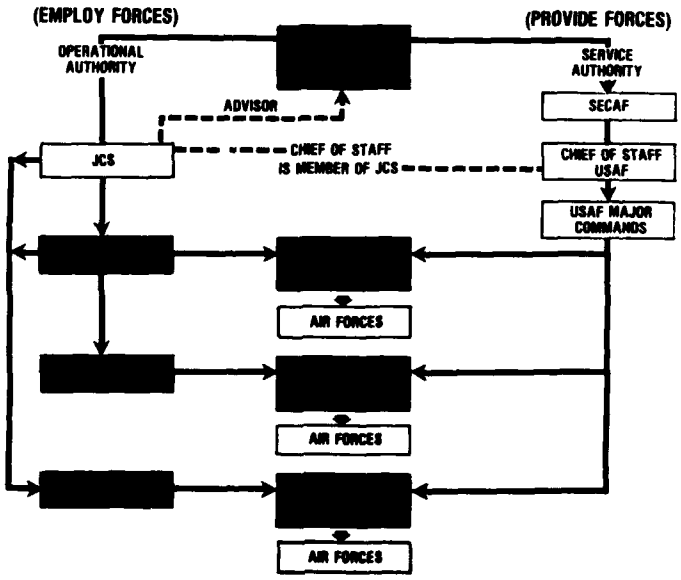

Figure 4-1. Command Structure.

Operational authority comes from the President through the Secretary of Defense (referred to as the National Command Authorities), with the advice and assistance of the Joint Chiefs of Staff, to the specified and unified commanders. The operational chain of command is concerned with the employment of forces. In unified (or subordinate unified) commands, commanders normally employ their forces through component commands. Component commands provide the structure through which the forces of different Services assigned or attached to a component may be effectively integrated and employed to achieve a common objective.

Service authority comes from the National Command Authorities to the Service Secretary, through the Service Chief of Staff, to the major command commanders. The Service chain of command is concerned with preparing and providing forces to the combatant commands. The Service chain of command involves the administration, discipline, internal organization, training, equipping, and sustaining of Service forces to include command of support forces.

Forces may also be organized into a joint task force or a uni-Service force. A joint task force consists of assigned or attached elements of the Army, the Navy or Marine Corps, and the Air Force or two or more of these Services. A joint task force, unlike a subordinate unified command, is a temporary command arrangement designed to accomplish a specific limited objective. A joint task may report to a unified command, to a specified command, to an existing joint task force, or directly to the NCA. Under exceptional circumstances and with the approval of the Joint Chiefs of Staff, the commander of a unified command may establish a separate uni-Service force, the commander of which operates directly under him. JCS Publication 2 describes these organizations in more detail.

Joint force commanders normally direct the employment of aerospace forces through the air component command; the air component command is composed of those individuals, organizations, weapon systems, and facilities that make up the air component's part of a joint force. The air component is employed as an interdependent force with the land and naval components.

Within a joint force, the air component command is the focal point for employing aerospace power. When the air component commander is an Air Force officer, he has a twofold responsibility:

> In the operational chain of command, to support and employ all aerospace forces under his operational authority as directed by the joint force commander. The air component commander is responsible for recommendations to the joint force commander on apportionment of aerospace forces and the targeting, allocation, and tasking of aerospace resources to accomplish assigned objectives. The component command headquarters is responsible for long range planning and interface with

the joint force command and the other components. Also, the air component commander normally has authority and responsibility for air defense and airspace control within the joint force commander's area of responsibility.

In the Service chain of command, to discharge and administer Air Force functions as they apply to Air Force personnel, organizations, support functions, and facilities assigned to his responsibility, to include interface with the other Services.

COMBINED OPERATIONS

Forces assigned to support alliance structures are organized functionally within a framework described as combined operations. Combined operations are conducted by forces of two or more allied nations acting together to attain the same objective. US forces participating in combined operations are subject to command arrangements and authorities established in international agreements. Air component commands in combined operations use employment structures similar to the framework of unified action described in JCS Publication 2. Figure 4-2 depicts a representative combined command structure.

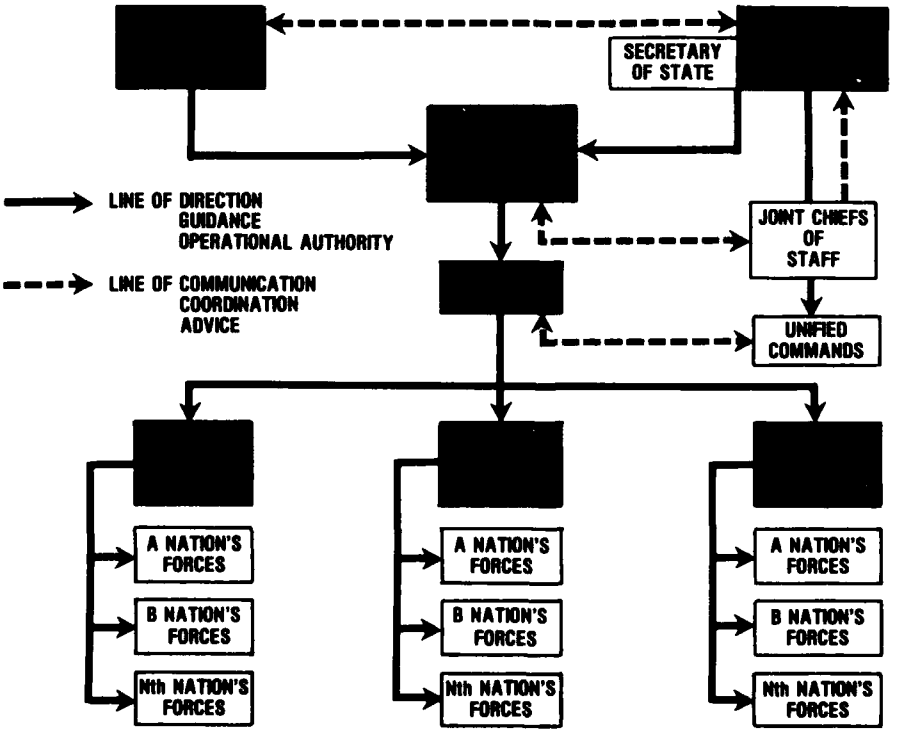

Figure 4-2. Combined Command Structure.

Combined commands tasked to employ forces during allied operations should be organized before the outbreak of war. Factors guiding combined organizational structures and command arrangements should include: the objective, composition and capabilities of friendly and enemy forces, political and military arrangements, and the strategy to employ allied forces. Combined command relationships may be based on agreements to achieve specific objectives, or on long-term international agreements based on broad mutual agreements.

Unified command arrangements supporting combined commands should be structured to ensure a smooth transition from joint to combined operations. The principles guiding unified action apply to both joint and combined operations - employ forces with unity of command as an integrated land, naval, and air team. Unified commanders and their subordinate component commanders may be dual-hatted as combined commanders. Combined commanders are given the operational authority to employ multinational forces, while each nation retains the responsibility for logistic and administrative support of its forces assigned to an alliance.

4-3. TRAINING AEROSPACE FORCES

The Air Force has a primary function to train combat and support forces to ensure the conduct of prompt and sustained aerospace combat. To carry out this function, all Air Force training efforts must contribute to the fundamental preparation of aerospace forces for the effective prosecution of war. This dictates that training is a force-wide, continuous process of applying education, skills, and experience to the goal of producing a credible, cohesive warfighting team.

Aerospace doctrine gives direction to our training. It is the authoritative statement that guides our detailed and coordinated effort to prepare forces in the many broad and diverse areas that contribute to our Air Force missions and specialized tasks. The keystone of our training is a commitment, within the Air Force, to a sense of mission and purpose as described by our doctrine. This commitment is the key ingredient that provides the foundation of a cohesive, dedicated, disciplined, and well trained force. Intrinsic to this commitment is recognition that the most important element of a well-trained force is its people.

Although the Air Force operates in a highly technical and dynamic environment, attention to the human element of professional military education and training is critical for establishing a competent, self-confident force. Our technical training and operational training are inseparable from professional military training, in the sense that the development of skills and proficiency without commitment produces a force with an absence of purpose. These two elements, education and training, enhance the competence of our personnel by broadening their perspectives, expanding their knowledge of war, and by preparing themselves to assume leadership positions of increasing

scope and responsibility. Thus, education and training comprise a continuum that does not begin or end with formal programs. They are inseparable elements of a continuous process that inspires commitment, both individually and as a team, to the mission of the Air Force.

If education and training are to foster commitment and team spirit, they must also establish high standards of performance. The combination of commitment and high standards helps ensure that Air Force forces can effectively prosecute their warfighting mission. Therefore, the Air Force institutionalizes its high standards with the singular purpose of creating a credible aerospace force. This confirms that Air Force standards must be first and foremost relevant and supportive of aerospace doctrine. Air Force forces meeting these standards establish an important measure of confidence, both internally and externally, that they can fight and win. Since all areas of the Air Force team contribute in some way to that end, it is important that this commitment to excellence pervades the entire Air Force, at every level, from our senior leadership to the newest trainees.

Sound military judgment and historical experience dictate the importance of educating and training forces in the way they intend to fight. Challenging professional military education and realistic training facilitate an effective transition from peace to war. The centerpiece of our professional military education programs is the study of the art and science of warfare. The goal of these programs is to influence and help produce a professional force that is prepared to apply theory and knowledge to the task of fighting and winning wars. Realistic training is also an important element of that process. To ensure the readiness of our forces, commanders must develop and implement training programs that build required warfighting skills and that simulate, as closely as possible, the combat environment in which we expect to fight. This means training in simulated combat situations that impose the operational realities of degraded command, control, and communications; adverse environmental conditions; and intense physical and electronic enemy threats. When we provide this kind of education and training, combined with superior aerospace equipment and the capability to sustain our operations, we maintain the highest level of readiness.

4-4. EQUIPPING AEROSPACE FORCES

> National safety would be endangered by an Air Force whose doctrines and techniques are tied solely on the equipment and process of the moment. Present equipment is but a step in progress, and any Air Force which does not keep its doctrines ahead of its equipment, and its vision far into the future, can only delude the nation into a false sense of security.
>
> General H.H. "Hap" Arnold, 1945

Congress has given the Department of the Air Force primary responsibility for equipping aerospace forces in peacetime for the effective prosecution of war. To fulfill this responsibility, the Air Force researches, develops, analyzes, tests, and acquires combat and service systems designed to engage and defeat any enemy in the aerospace. These systems are designed to support the employment of aerospace power and surface forces in the broad categories of strategic, tactical, and mobility operations.

Doctrine is at the very heart of warfare. Our warfare systems must be designed to be capable of waging war and achieving victory, or more simply stated, capable of carrying out our doctrine. This demands that Air Force research and development efforts are initiated and continually monitored to ensure this purpose is served. This is a complex and demanding task because of the vast and diverse systems that comprise aerospace forces. It places a burden on Air Force leadership, at all echelons and in all areas, not only to know current aerospace doctrine intimately but also to influence its refinement as emerging technologies lead to the development of new employment concepts.

In a world constantly being shaped by new discoveries, planners often face a difficult choice between the horizons of new capabilities, as promised by future technology, and the urgent necessity to maintain a warfighting capability that meets current requirements. There is a delicate balance in resolving this dilemma which may require some difficult tradeoffs. Therefore, the primary guidance in this process must be doctrine. The Air Force must develop enduring aerospace systems and ones that possess an optimum mix of the fundamental characteristics of speed, range, and flexibility. To restrict, by design, any one of these in a weapon system is to inhibit the capability of that system. For example, to restrict speed may make a system too vulnerable to enemy threats, incapable of reacting to enemy initiatives, or unable to seize the offensive or conduct surprise attacks. To restrict range may result in conducting the air war over friendly airspace rather than over enemy airspace. To restrict the flexibility of aerospace systems is to limit their versatility to carry out the variety of tasks demanded of airpower.

The role of doctrine in the equipping process is a two-way street: the development of emerging technologies may well influence the development of doctrine, but the procurement of weapon systems must primarily provide the capability to execute current doctrine. This demands that the Air Force equip its forces with technologies that are demonstrated as reliable and capable of achieving objectives against current threats, and that these forces possess the inherent capability and growth potential to respond to projected threats. This is not to deny the search for new technologies or employment concepts, but it is to confirm that these new introductions meet the demands of sound judgment and contribute to achieving confirmed military objectives.

Providing this force involves selecting reliable systems, in adequate numbers, and with the capability to survive and be maintained in all combat environments.

National military objectives describe this as developing a strong force prepared to "fight at whatever level of intensity necessary and for as long as necessary to ensure that the US postwar position is superior to that of any adversary." The challenge is to equip today's forces sufficiently while developing the aerospace forces to fight and win tomorrow's war. The capability to win tomorrow's war demands that Air Force research and development efforts must not only exploit new technologies, they must also push the limits of technology to discovery and breakthrough.

4-5. SUSTAINING AEROSPACE FORCES

> When the enemy assesses our forces, he values only those forces which the logistics community has ready for combat, or can get ready in time, and then sustain for a requisite period of combat.
>
> General F.M. Rogers, 1976

The Air Force has been given the responsibility to organize, train, and equip aerospace forces for the conduct of prompt and sustained combat operations. This requirement for prompt and sustained operations demands the development and maintenance of an adequate and timely logistics capability.

Logistics ensures that Air Force forces have the support to train daily and the support to fight at all levels of intensity for as long as necessary to ensure victory. This logistics capability is directly tied to our force structure. Planning which provides a force structure that cannot be effectively maintained is based upon a misunderstanding of the role of logistics. Our planning process must recognize that all operations, both in peacetime and wartime, are totally dependent on logistics. The warfighting capability of aerospace forces is not credible without the logistics capability to sustain our forces in the tasks of preparation, execution, and fighting. This requires a total logistics effort, both in planning and implementing, that includes two prime responsibilities—to support the design and extent of force structure and to design the support system required to maintain and supply that force.

The experience of warfare has demonstrated the significant role of logistics in providing the necessary strength when and where it has been needed most. The critical functions of supply and maintenance have often proven to be the key to success or the cause of defeat. To ensure that Air Force forces are the best equipped fighting force in the world, careful attention must be paid to the logistics system that maintains and supplies these forces in the field. This compels the Air Force to develop a logistics system that is simple, secure, and survivable, and one that ensures the required resources are available when and where they are needed and in all combat environments. Since logistics could well determine the limits of our operational capability, it must be given equal consideration in the planning process with research and development, training, and force structure. This is a demanding and complex task that requires close interaction and coordination within the Air Force and between the Air Force and the combatant commands.

Commanders must control their resources by establishing requirements based on objectives, threats, opportunities, and the transportation network to move warfighting resources. War sustaining operations must be directed toward an objective that is clearly defined and obtainable. Our logistics system must be capable of supporting that objective with the worldwide deployment and employment of aerospace forces. Our logistics system must also be capable of functioning at every level of conflict. In this process, the logistics system sustains strategic, tactical, and mobility operations and responds to the timing, phasing, and intensity of military operations. The logistics system, as a partner in logistically-supportable strength that forms a credible warfighting capability, is a critical element in the readiness of our forces.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

CHARLES A. GABRIEL, General, USAF
Chief of Staff

JAMES H. DELANEY, Colonel, USAF
Director of Administration

SUMMARY OF CHANGES

This revision provides updated guidance to the Air Force for preparing and employing aerospace forces. It has been completely reorganized and redesigned to underscore the central and most enduring beliefs of the Air Force on the best way to wage war in the aerospace and achieve victory.

Distribution: F; X; (1 copy for each Air Force general officer and 1 copy per four Air Force officers) plus:

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Annex A
Evolution of Basic Doctrine

ANNEX A
EVOLUTION OF BASIC DOCTRINE

Since the beginning of powered flight, much has been written on the employment of airpower in warfare. When certain principles and precepts gained the official endorsement of a particular military leadership, they became the warfighting doctrine of that military community. For airpower, there have been doctrines that have worked in war and others that, under the test of combat, have failed. Often, the reasons for success or failure depended on how the doctrine was applied and the relevance and effectiveness of the doctrine itself. Doctrine that has been applied rigidly and inflexibly, with no room for improvisation or initiative, has often degenerated into dogma and consequently failed. The purpose of basic doctrine has been to provide guidelines for employing airpower, but not a checklist of inflexible rules to be followed blindly. Doctrine which has proved irrelevant and ineffective has been abandoned and in its place, has come new doctrine, often the result of lessons learned during or after recent combat. In addition, doctrine has also been influenced by technological change and national policy.

This manual represents the latest iteration of a gradual process of development that began after World War I. Even before the war was over, the basic outlines of today's aerospace doctrine began to emerge among the air forces of the beligerents. To place aerospace doctrine in perspective and to understand better its evolution, it is useful to understand the roots of basic doctrine and to trace its development since that era.

There have been two clearly distinguishable periods in this evolution, separated by the year 1943. Until that time, because the Air Force was still part of the Army, official airpower doctrine was tied closely to surface forces. In 1926, the War Department declared that the purpose of air units was to aid the ground forces by destroying enemy planes and attacking enemy ground forces. Aircraft were also assigned the roles of aerial observation, adjusting artillery fire, and providing messenger service and transportation for special personnel. The doctrinal manual of the period, *Fundamental Principles for the Employment of the Air Service*, War Department Training Regulation (TR) 440-15, 1926, stated that air elements were controlled by Army commanders who decided how aircraft would be employed. At the same time, however, aviators at the Air Corps' Tactical School and in the office of the Chief of the Air Corps were nurturing a divergent theory that aircraft could perform

much broader and more independent missions. They envisioned an air arm equal, rather than subordinate, to the land and sea forces. Some believed that the air arm should be recognized as the nation's first defense against an invasion force; some considered strategic bombing aimed at military and economic targets deep in the interior of an enemy's homeland as potentially decisive in war. By the mid thirties, many aviators had become convinced of the power of strategic air attack to decide the outcome of a war independent of ground or naval operations.

A compromise of sorts was reached in the mid thirties. While continuing to picture air forces as "furthering the mission of the territorial or tactical (ground) commands to which they were assigned," a War Department regulation, *Employment of the Air Force of the Army,* War Department Training Regulation 440-15, 1935, recognized that airpower might have some role beyond the land battle. Despite the creation of a centralized General Headquarters (GHQ) Air Force in 1935, air units remained fragmented and organic to Army divisions for operations.

Enlarging the loopholes in TR 440-15, the Air Corps, in 1940, won War Department approval of a new field manual, *Employment of the Aviation of the Army,* War Department Field Manual 1-5, 1940, which represented a further small step toward independence. On the one hand, this manual continued to respect the old relationship between air and ground warfare. Reconnaissance, observation, and liaison squadrons were assigned to armies, corps, and divisions. Portions of the GHQ Air Force's attack units could be attached to armies or corps for specific missions but were to revert to GHQ afterwards. On the other hand, strategic bombing was acknowledged as a valid function "to nullify the enemy's war effort or to defeat important elements of the hostile military forces."

As late as April 1942, an Army field manual, *Aviation in Support of Ground Forces,* Army Field Manual 31-35, 1942, continued to attach air forces to ground commanders who were given the authority to decide how to use them, including decisions on target priorities.

Late in 1942, the war in North Africa provided the catalyst for the Air Force's doctrinal separation from the Army and the creation of its own doctrine. Benefiting from the American air lessons learned in North Africa and the British air lessons learned throughout the Mediterranean and Middle East, the War Department in July 1943, issued a new statement on the command and employment of airpower, FM 100-20, *Command and Employment of Air Power,* 21 July 1943. Viewed by many as the Air Force's "Declaration of Independence," this document stated that land and air power were coequal and interdependent forces, with "neither an auxilliary of the other." It stated that "the gaining of air superiority is the first requirement for the success of any major land operation." The manual went

on to assert that air power must be centrally controlled and employed by an air commander, in part because,

> . . . the inherent flexibility of air power is its greatest asset. The flexibility makes it possible to employ the whole weight of the available air power against selected areas in turn; such concentrated use of air striking force is a battle winning factor of the first importance.
>
> FM 100-20, *Command and Employment of Air Power,* 1943

During World War II, air power strategies and tactics were greatly refined. Some air operations were tied closely to the tactical objectives of surface forces—that is to influence land and naval combat. Other operations were tied to the strategic objectives of attacking the war-sustaining capabilities and will of the enemy. In land operations, air forces were to gain air superiority, "isolate" the battlefield as far as possible, then carry out close air support operations to enable surface forces to defeat opposing surface forces.

When the Air Force became independent of the Army in 1947, the new Service went through a transition period in separating its philosophy and doctrine from that of the Army. The first official Air Force publication on basic doctrine, AFM 1-2, *USAF Basic Doctrine,* 1953, reflected the influence of early Army Air Corps statements. The manual recommended a plan for employing air power which centered on three tasks: control of the air, attack of the enemy heartland, and the attack of peripheral targets. However, both the 1953 version and its 1954 successor focused almost completely on the World War II experience, leaving out experiences learned in the Korean War. The manual also introduced statements of national policy and explained that the purpose of the US military was "to deter the use of military force by nations endeavoring to impose their policies on others."

The 1955 version of AFM 1-2 also stressed the lessons of World War II. After a brief opening statement noting the primacy of deterrence, the manual concentrated on how to apply force if deterrence failed. Air power's greatest opportunities lay in direct attacks against both the enemy's heartland (his war-sustaining resources) and his periphery (his air and surface efforts).

The last basic doctrine document of the decade, the 1959 version, contained very few changes from its three predecessors, with the notable exception that the manual acknowledged developments in missiles and space by replacing the word "air power" with "aerospace power." It described aerospace as the operational medium of the Air Force, "the total expanse beyond the Earth's surface."

By 1964, such major events as the Berlin Crisis, the Cuban Missile Crisis, Soviet-supported subversion and insurgencies in Africa, Latin America, and

Southeast Asia, the Navy's attainment of a strategic nuclear capability, the Army's attempts to develop its own air capabilities, and the Defense Department's adoption of the strategy of flexible response were having a major impact on the Air Force. The basic doctrine manual published that year was changed from AFM 1-2 to AFM 1-1, and while focusing on the concept of deterrence, it introduced the policy of flexible response. Flexible response posited the possibility of a spectrum of conflict against which national leaders would select the best use of strategic and tactical forces to deter or decide the conflict. This policy asserted that, given the existence of substantial opposing nuclear forces, total victory in the World War II sense—for any nation—might be unattainable.

The 1964 manual suggested that nuclear strength could deter lower level conflicts. In that context, the Air Force's primary purpose was still to deter aggression, and the process to do that was spelled out. Should nuclear deterrence fail, the Air Force must be ready to fight either a general nuclear, a tactical nuclear, a conventional, or a counterinsurgency war. General nuclear war could take the form of attacks against either urban or industrial areas (countervalue), military capabilities (counterforce), or against a combination of these. A mixed force of manned and unmanned offensive and defensive systems was required for general war. The three less intense forms of warfare called for the traditional missions of air superiority (counterair), interdiction, close air support, airlift, and reconnaissance. Regardless of the type of war, aerospace forces were most effective when they were centrally directed at levels high enough to exploit the weapons fully. This part of official doctrine had not changed since 1943.

The 1964 revision was the first manual of basic doctrine to discuss categories of aerospace doctrine as basic, operational, and unified. It was the first doctrinal statement urging the Air Force to pursue vertical takeoff technologies and dispersed operating locations to increase the survivability of its forces (the next version of the manual deleted this statement), and finally, it was the first Air Force manual of basic doctrine to omit the Principles of War.

It took seven years to produce the next revision. In the 1971 version, deterrence remained the keystone of the US military policy. The lessons of the Middle East War of 1967, the Soviet invasion of Czechoslovakia the following year, and the conflict in Vietnam were reflected throughout the document, but nowhere more directly than in the statement that "strategic force sufficiency may not be a credible deterrent against hostile acts by small powers alone or while serving as proxies for larger powers." This edition recognized explicitly the additional need for deterrence by general purpose forces.

The earlier categories of general and limited war were replaced with new ones: conventional war, high intensity war, low intensity war, and special

operations. Regardless of the level of conflict, however, central allocation and local direction of air forces remained fundamental principles. This particular version reiterated the basic tasks of airpower, which remained essentially unchanged: counterair, close air support, interdiction, reconnaissance, airlift, and strategic attack. It was also the first edition to include subelement tasks: search and rescue, electronic warfare, air refueling, airborne command and control, psychological operations, and supporting functions.

The 1971 version stated that operational doctrine was published in the Air Force 2- and 3- numbered series of manuals. It also changed unified to joint doctrine, and introduced a new category: functional doctrine, which provided guidance for functional support areas such as logistics and training. The manual returned to an earlier emphasis on using aerospace forces in "antinaval warfare." Although previous editions discussed aerospace forces, this was the first edition to discuss "The Role of the Air Forces in Space," enumerating a series of operational responsibilities in space, including "detection associated with antisatellite operations." It asserted that employing aerospace systems from the atmosphere into space was a "natural and evolutionary extension of US Air Force mission responsibilities and operational capabilities." The 1971 version was also the first manual of basic doctrine to devote an entire chapter to Air Force special operations, elaborating three elements: foreign internal defense, psychological operations, and unconventional warfare.

Four years later, the 1975 edition of AFM 1-1 emphasized the philosophy of "sufficiency," and it identified the strategic triad as the highest national defense priority. The manual introduced the Department of Defense Total Force Policy, defined as "the entity of US active, US reserve, and allied forces." This policy emphasized that DOD planning and force structuring had to consider both US and allied force capabilities. This edition was the first to discuss combined doctrine.

The 1975 version eliminated the functional category of doctrine, reintroduced the Principles of War, and identified eight basic operational missions of the Air Force, rather than listing them as operational tasks. This manual did list the subelement tasks, but it did not elaborate with separate discussions of each. Centralized control and decentralized execution remained the keystone of command and control. With the end of the Southeast Asian conflict, particular emphasis was placed in the manual on the Air Force role in peacetime security and in enhancing national prestige.

The 1979 revision of basic doctrine was essentially a codification and expansion of the ideas that evolved over the years. It stated the following national military objectives: to sustain deterrence, defend the United States, conduct warfare if called upon to do so, and resolve conflict quickly and effectively. Once again, the levels of conflict were redefined, this time into localized war, theater conventional war, theater nuclear war, and strategic nuclear war.

The Air Force's role in localized warfare was solely to provide resources to friendly nations so that they could defeat subversion. The basic operational missions were expanded slightly to include strategic offense, space operations, strategic defense, airlift, close air support, interdiction, counterair, reconnaissance, and special operations. In addition, the manual identified support of naval operations as a collateral function. The subelement tasks were discussed as tasks and specialized tasks, and the manual included a discussion of composite strike forces which would integrate Air Force missions and specialized tasks into theater warfare operations. Centralized control and decentralized execution, as well as the Principles of War, remained unaltered.

In sum, since 1943, several fundamental beliefs have remained imbedded in Air Force doctrine. Airpower can exploit speed, range, and flexibility, better than land and seas forces, and therefore, it must be allowed to operate independently of these forces. These characteristics are most fully realized when airpower is controlled centrally but executed decentrally. The principal missions of airpower have evolved over the years and reflect what airpower does best. Although priorities in their application have shifted with changes in national policy, the beliefs about the proper employment of airpower have remained fundamentally constant in the face of profound changes in technology, strategy, and international relations.

Annex B
Selected Bibliography and Reading List

ANNEX B
SELECTED BIBLIOGRAPHY AND READING LIST

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